

PUBLISHED EVERY FRIDAY

AT

33, TOTHELL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"

Telephone No.: WHITEHALL 9233 (8 lines)

Annual subscription payable in advance and postage free

British Isles and Abroad 12 5s. 0d.

Single Copies One Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 84 NO. 1

FRIDAY, JANUARY 4, 1946

CONTENTS

	PAGE
Editorial Notes*	1
Northern Ireland Railways in 1944	3
Government's Air Plan	3
The Pullman Car Company	4
The Argentine Railway Year	4
The Railway Position in 1846	5
Letters to the Editor	6
The Scrap Heap	8
Overseas Railway Affairs—India, South Africa, United States, Argentina, Brazil	9
Bengal Assam Railway Lines of Communication for the Burma Campaign	11
Some Notes on the "Merchant Navy" Class Locomotives, S.R.—3	12
Mechanised Goods Shed Operation, L.M.S.R.	15
Personal	19
Leopoldina Railway Co. Ltd.	23
The British Railways Stockholders Union Limited	23
Notes and News	26
Stock Market and Table	28

DIESEL RAILWAY TRACTION SUPPLEMENT

The January issue of THE RAILWAY GAZETTE Supplement, illustrating and describing development in Diesel Railway Traction, is now ready, price 1s.

TO CALLERS AND TELEPHONERS

Until further notice our office hours are: Mondays to Fridays, 9.30 a.m. till 5.30 p.m.
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Nationalisation Plan for Coal Industry

THE Government has now brought forward the Coal Industry Nationalisation Bill, the first of its kind to deal with a major British industry. It was hardly to be expected that the Bill would be popular, except among those bent on State ownership of basic industries, but both in its complexity and in the important matters which are left in doubt, the Bill is a poor tribute to its sponsors. It sets up a National Coal Board of nine persons, which is to have complete operational freedom for the day-to-day control of the industry. Some 850 colliery undertakings are to be taken over, and a compensation tribunal will assess the value of the coal assets. Compensation is to be in the form of Government stock, and provision is made for regulating the disposal of compensation stock of colliery companies. In nationalising the coal industry, not only the working, getting, and supplying of coal will be taken over, but certain allied activities, in particular colliery coke ovens, manufactured fuel plants, colliery electricity works, colliery transportation works, colliery merchanting property, and colliery welfare activities. The compensation payable is to be ascertained separately in respect of the assets of the coal industry, as defined for the purpose of the district wages ascertainment regulating wages, and all other assets transferred to the Board.

Many Uncertainties

The uncertainties which remain after the issue of the Bill are considerable. In the first place, in the absence of agreement on terms of acquisition, Parliament is to give the arbitration tribunal a blank cheque and in view of the complexity of the valuation which must be made by the Tribunal, it is likely that the Bill will have become law long before any precise estimate can be made as to the amount involved. Secondly, when these valuations have been carried out, the Treasury is to have power to enforce on existing owners a security which will be unmarketable for many holders. Apart from the question of the different categories into which colliery assets may fall, it will be necessary for the global compensation for the whole industry to be split between districts and then re-split between the units ranking for compensation, and, when the amounts appertaining to a company have been finally decided, they have to be apportioned between the various classes of debenture or share holders. This division, it is important to note, is to take account of existing income and the rights of priority. The arbitration tribunal, on the one hand, is to assess the value on the basis of a sale in the open market by a willing seller to a willing buyer, but the Bill also makes reference to "net maintainable revenue," which may be quite a different thing. The main objection, however, is that coal owners are to be forced to give up their properties for a sum at present uncalculated; and if, for example, iron and steel companies, whose coal assets are taken over, wish to use the proceeds to extend their other businesses, they will have to seek permission of the Treasury. This is a most undesirable provision, for, extended to other industries listed for nationalisation, it might mean that capital at present in coal mines, railways, power companies, and so on, might in effect become frozen in the form of a forced loan to the Government.

Sir Harold Hartley

When Sir Harold Hartley became Vice-President (Works & Auxiliary Undertakings) and Director of Scientific Research of the London Midland & Scottish Railway early in 1930, the appointment marked an innovation in railway administration. The late Lord Stamp, then Chairman & President of the Executive, L.M.S.R., was a keen advocate of the value of scientific research in industry, and he did much to further that ideal among the British railways. During the last 15 years Sir Harold Hartley's activities have been associated particularly with fuel research and aeronautics. In the former field he has held a number of important offices, and in his particular capacity as Vice-President (Works & Auxiliary Undertakings) he was responsible for the administration of the L.M.S.R. workshops during the war, which made a notable contribution to aircraft construction and repair under the late Mr. E. C. Fairburn, who, until his recent death, was Chief Mechanical & Electrical Engineer. He has been a prominent figure in the development of railway associated air services and became Chairman of Railway Air Services Limited in 1934. Elsewhere in this issue we publish a portrait and some biographical details of Sir Harold Hartley, and an announcement by the Ministry of Civil Aviation that he has resigned the Vice-Presidency of the L.M.S.R. and the Chairmanship of Railway Air Services Limited, to become an additional member of the board of British Overseas Airways Corporation.

Railway Nationalisation Surmises

It is generally expected that the next important item in the nationalisation programme of the Government will be the railways. The political correspondent of *The Sunday Times* states that the Bill is now under consideration and that

may be introduced into the House before the autumn. He assumes that the system adopted for running the mines—a National Board responsible to the Minister—will be applied to the railways. He thinks, too, that there should be no undue expectations about consultation by the Government with the companies. The colliery owners did not see a draft of the Bill to nationalise the pits, and knew nothing about its contents until it was published. The offer of the coal owners to assist in working out the organisation of public ownership was not accepted. From this he infers that the procedure adopted by the Government shows that it has its own pre-conceived ideas of what should be done, and is not inclined to seek advice, however expert and well-intentioned, from those who have life-long knowledge and experience. It is, indeed, becoming clear that the Government intends to work to a timetable in relation to its nationalisation schemes, and that if such matters as the assessment of compensation appear likely to be protracted, the Bills implementing the broad policy of the administration will be introduced, and the working out of terms of acquisition, and even of organisation other than in its broadest details, left for later consideration by tribunals or other bodies.

Overseas Railway Traffics

In recent years, at the request of some of our readers interested in our overseas railway weekly traffics table, we have expressed the takings of the Argentine railways in terms of sterling converted from pesos at the arbitrary rate of 16 to the £. This formula has proved to be misleading inasmuch as the rate of exchange used by the Argentine companies for their remittances to this country is a matter of mutual negotiation and arrangement with the Argentine Government. In future, therefore, the Argentine railway traffics in our weekly table will be rendered in the currency of that country, as was our former practice. The receipts in pesos for the present year's working to December 15 are as under :—

	No. of week traffics	Weekly traffics	Inc. or dec.	Aggregate traffic	Inc. or dec.
Buenos Ayres & Pacific	... 23	2,507,000	+ 337,000	50,059,000	+ 2,103,000
Buenos Ayres Great Southern	... 23	3,920,000	+ 75,370,000	5,364,000	+ 5,664,000
Buenos Ayres Western	... 23	1,395,000	+ 29,000	28,049,000	+ 1,411,000
Central Argentine	... 23	3,091,500	-	72,799,000	+ 1,163,950
Entre Rios	... 23	420,300	- 31,000	10,096,000	+ 1,070,100
Canadian Pacific	... 51	5,740,000	- 491,000	308,471,000	+ 2,659,000

The receipts of the South African Railways & Harbours continue to show an upward tendency. The Beira Railway for the first month of the new accountancy year has registered a decline of 10 per cent. compared with the previous year, but the receipts of the Rhodesia Railways were fully maintained during the first month of the year.

Railway Stockholders and Nationalisation

At a well attended meeting of the British Railway Stockholders' Union Limited, held at Caxton Hall on December 21 and reported elsewhere in this issue, the Chairman of the Union, Sir Charles Stuart Williams, stressed the momentous change with which the British railways were faced by the advent of a Socialist Government pledged to a policy of the nationalisation of transport. The execution of this policy would entail financial compensation for the stockholders, but on what basis this would be assessed had not yet been disclosed. The Union, however, held strongly that the standard revenue embodied in the Railways Act, 1821, offered the only statutory basis for assessing railway revenue, and this principle should be used to ascertain the "net maintainable revenue." Another member of the Council of the Union, Mr. Frederick Smith, M.Inst.T., supported this view, stressing that railway nationalisation should not be approached by analogy with what compensation basis was being used in regard to other nationalised industries, because the railways had a definite legal basis established by the Railways Act on which they could expect to be treated when the question of financial compensation was considered.

Burma Campaign Lines of Communication

Elsewhere in this issue we publish some notes on the doubling of 228 miles of the Bengal Assam Railway to improve the lines of communication of the Burma campaign. The target tonnage required to be carried by rail to supply our forces was 7,000 a day, and the best month's average was within about 25 tons of this figure. The sections of railway concerned were almost all of metre gauge and, previously, single line throughout, but between the autumn of 1943 and the spring of 1945, 170 miles of that gauge were doubled. In the former year about twice this mileage had been scheduled

for doubling, but the introduction of American operating methods and concentration on the construction of many additional intermediate crossing stations enabled the necessary tonnage to be handled with the shorter length of doubling. These stations and the original ones as remodelled now have four lines for crossing trains of up to 125 wagons. Other improvements were the provision of holding yards, quick coaling and watering arrangements, enterprising traffic control, almost unlimited fuel and power, train-following line-clear working, and freight trains run at mail speeds. On at least one section of line traffic density averaged 44 trains, 22 each way daily, and for short periods as many as 70 trains a day, on an average, were run. It is hardly surprising that with such continuous line occupation it proved impossible to squeeze in an adequate number of additional trains for construction purposes. That so heavy a construction programme was carried out, therefore, is all the more remarkable and creditable to the engineering staff from the Chief Engineer downwards, especially as it included a big bridge—seven spans of 150 ft.—on well foundation 70 ft. deep, built in eight months.

L.M.S.R. Mechanised Goods Shed Operation

In our November 2 issue we gave an account of the opening of the L.M.S.R. mechanised new goods shed at Lawley Street Depot, Birmingham. In the present issue we give illustrations and descriptions of the lay-out with the mechanical and electrical appliances which have been installed in the new shed together with the methods of operation. These constitute a revolutionary departure in goods shed working. A striking feature of the installation which is brought out in the illustrations is the orderliness in the new shed in the execution of the work in contrast to the hustle and bustle which are inevitable concomitants of the former type of shed working; in fact the contrast of the two types of shed is identical with the absence of noise and chaos at a large electrically-operated passenger terminal, compared with one still operated by steam traction. The new system is the product of extensive and prolonged research on the part of L.M.S.R. officials, which no doubt accounts for the success which has attended the inauguration of the scheme.

Institute of Transport: Council's Annual Report

In the course of the report of the Council of the Institute of Transport on the work of the Institute for its Silver Jubilee Year, which ended on September 30, 1945, it is stated that there were on the roll at September 30, 1945, 2,394 corporate, and 3,984 non-corporate members, a total of 6,378, compared with 5,796 at September 30, 1944, and with 5,053 at September 30, 1939. The financial position of the Institute continued satisfactory. The Council decided to continue for the year 1945-46 the halving of the subscriptions of associate members by examination, but arranged for the normal rates for graduates and students to apply again as from October 1, 1945. The question of the Institute's premises was considered by the Council, which approved the policy of securing a permanent home for the Institute, and appointed a committee comprising the President and Past-Presidents serving on the Council to pursue the matter. The Institute resumed occupation of a part of its accommodation which had been sub-let to the British Electrical & Allied Industries Research Association in 1941. The Council offers its warm thanks to the transport press for the help received from it during the year, and records that officers and members of the Executive Committee again had the opportunity of meeting the editors or representatives of some twenty of the leading publications directly interested in transport and of exchanging views and ideas with them.

G.W.R. Collision Near Reading

Suggestions have been made in the press that the collision on the G.W.R. near Kennet Bridge, Reading, on December 20, was due to some mysterious failure of the automatic train control apparatus. The facts are that the 11 p.m. passenger train from Paddington to Reading came to a stand on the down main line between Sonning and Kennet Bridge signal boxes as a result of falling vacuum pressure, which was found to be due to the communication cord being pulled in one of the compartments. While the guard was endeavouring to ascertain the reason for the chain being pulled, the first part of the following 11.40 p.m. passenger train from Paddington to Penzance ran into the rear of the 11 p.m., derailing and extensively damaging four parcels vans. Fortunately no one in either train was injured, but some delays occurred as the up main line was also obstructed by the wreckage. The suggestion that the automatic train control apparatus failed is quite incorrect, as we understand the mishap was due to a signalman's error, against which in this instance automatic train control would have provided no remedy.

An Accident on the Metropolitan Railway

One of the very few railway accidents which have occurred in recent years on the London Underground railway system, took place on December 31. At 9.20 a.m. on that day, the Baker Street-Aylesbury train ran into the rear of the Watford-bound train which was stationary between Northwood Hills and Northwood Stations. Three persons were killed. Both lines were blocked by the mishap. So elaborate are the precautions taken on the Underground railways to prevent collisions, and so unfailingly do the automatic signals and train stops work, that so far as we know, the recent accident was only the second involving fatality which has occurred on the Metropolitan Railway and only the fourth on the Underground system. The worst accident on this system occurred on May 17, 1938, on the District Railway between Charing Cross and Temple Stations, when six persons were killed and some 40 injured. So far as we can trace, there had been only one previous collision fatal to a passenger on the District Railway, namely, on January 29, 1876, just west of Earls Court, when, on trying to start from a signal, the train ran backwards on the steep incline towards Addison Road and was struck by a train going to Hammersmith. At West Hampstead in 1907 three persons were killed. A slight collision at Baker Street on June 14, 1945, subsequently proved fatal to one passenger, but death was attributed to the shock accelerating serious heart disease from which he was suffering, and an unusual case of this kind may scarcely be reckoned as a collision fatality.

* * * *

No Cause for Alarm

It requires only two or three railway accidents to happen within a short interval—such as that at Bourne End when there were 39 fatalities or that at Lichfield on January 1 when at least 17 passengers were killed—for members of the public to evince some alarm and express the view that things are getting in a bad way and that something ought to be done about it. The very rarity of a serious accident on our railways helps to create this impression when one does unfortunately occur, and a few casualties, regrettable as they must be, will awaken more discussion than all those resulting in a twelve-month from some other means of transport. As in so many public questions, a fair opinion cannot be formed on this problem apart from the possession of a sense of proportion, and this is precisely what is lacking in the critics who have so much to say when an accident occurs that particularly stirs the imagination. As recently reported in our columns, a question was asked on this subject in Parliament, no doubt prompted by the Bourne End derailment, and the Minister of War Transport, Mr. Alfred Barnes furnished in reply a number of statistics which show, as do the annual reports of Sir Alan Mount, on which they were based, that in reality the public has no cause whatever for alarm.

* * * *

Oil-Firing on Locomotives

The reintroduction into Great Britain of oil-firing on locomotives, now under trial on a considerable scale by the Great Western Railway, will be successful only in so far as the oil is put to the most economical use, for proper control of the oil feed and atomisation is as scientific an operation as coal-firing. In the early years of the century, encouraging results were obtained on the then Great Eastern Railway in the use of oil-firing, but the subsequent increase in the price of oil nullified the success by making firing with oil considerably more expensive than with coal. Now, with coal itself more costly and of a declining quality, the boot may be on the other leg, and oil has an unusual opportunity to justify its use on locomotives in this country. At a recent American convention on locomotive fuel, stress was laid on the careful work required of a fireman on an oil-fired locomotive. Maximum efficiency in the use of fuel can be achieved only if the pressure and water-level in the boiler are maintained as evenly as possible. Forcing the fire to meet a sudden demand for steam or to correct an unduly low pressure, or undue introduction of cold water into the boiler to bring down an excessively high pressure, are both harmful, as the abrupt temperature changes so caused set up undesirable strains in the firebox and boiler. Extravagant use of fuel, made immediately apparent by the emission of black smoke from the chimney, causes carbon deposits to form in the firebox, which hinder conduction and lower efficiency. As with coal-firing, the oil supply should be proportioned to the draught conditions, and the expert fireman with oil is the one who, from before starting to the end of the run, anticipates exactly his driver's demand on the boiler.

Northern Ireland Railways in 1944

THE financial results for 1944 of the railways wholly or partly in Northern Ireland are now available. According to the figures supplied by the Ministry of Commerce, on the railways wholly in Northern Ireland—the Belfast & County Down, Bessbrook & Newry, and the Carrick Fergus Harbour Junction, and the Northern Counties (L.M.S.R.)—the net revenue available for appropriation was £360,122, a decrease of £2,795 compared with 1943. The total receipts at £1,676,353 showed an increase of £63,416, and expenditure at £1,406,399, an increase by £94,846 over 1943. The total net revenue available for appropriation amounted to £360,122, a decrease of £2,795 compared with 1943. The number of passengers, excluding season-ticket holders, originating on these railways increased during the year by 769,081. The tonnage of goods and merchandise originating on them totalled 944,509, which was an increase of 91,977 tons over the previous year. The operating ratio was 83.90 per cent.

The railways partly in Northern Ireland include the County Donegal, Dundalk, Newry & Greenore, Great Northern, Londonderry & Lough Swilly, Sligo, Leitrim & Northern Counties, and Strabane & Letterkenny. The total receipts of these railways amounted to £3,173,068, an increase of £239,359 over 1943. The expenditure totalled £2,561,144, an increase of £33,667. The total net revenue available for appropriation was £250,910, an increase of £27,415. The number of passengers, excluding season-ticket holders, originating increased by 275,072. The tonnage of freight was 1,496,540, an increase of 68,947 tons. The operating ratio of these railways was 80.15 per cent. The combined operating ratio for all Northern Ireland railways was 81.20 per cent. Receipts and expenditure per train mile are given below:—

	£.
Railways wholly in Northern Ireland :—	
Receipts	8.90 per train mile
Expenditure	7.46 "
Railways partly in Northern Ireland :—	
Receipts	8.62
Expenditure	6.95 "
All railways in Northern Ireland :—	
Receipts	8.71
Expenditure	7.13 "
* * * * *	

Government Air Plan

ANOTHER chapter in the very protracted story of British civil aviation was reached on December 19, when a White Paper (Cmd. 6712) was published amplifying the statements of principles made in both Houses of Parliament on November 1 as to the future of civil aviation. Unfortunately, the White Paper is much less revealing than had been expected, and it is silent on a large number of major points, particularly those concerned with the actual operations of the new corporations.

After referring to the unwillingness of the various nations to place their air services under the control of a single international owning and operating body, the Government claims that its plan can be fitted readily into any future scheme of international organisation. It states that there will be the fullest co-operation with the Dominions and Colonies and that, by agreement with those concerned, services on Commonwealth air routes will be operated in parallel by independent national air lines under partnership arrangements, with pooling of traffic receipts and common user of facilities, and so forth. For these reasons the Government states it has decided that air transport services in the United Kingdom shall be placed under national ownership and control. This policy, it is claimed, offers the best guarantee of the public of disinterested expansion of the nation's air services with economy and efficiency—a statement for which there is no foundation at present. The White Paper then suggests that as costs of operation are progressively reduced, the taxpayer may receive some benefit in return for the payments he will have to make during the initial period of State-aided operation and in developing uneconomic services, but it would clearly be unwise for taxpayers generally to rely on much assistance in this direction for some time.

Various reasons are set out in support of the decision of the Government not to entrust the operation of all air services to a single corporation, the principal of which is the necessity for encouraging different methods of approach to the techniques of air-line operation and of avoiding placing sole responsibility into the hands of one management group, a statement which sounds somewhat unconvincing. Although the Government can decide only in the light of experience how many corporations ultimately will be desirable, it proposes initially that there should be three

separate statutory corporations covering respectively (a) routes between the United Kingdom and other Commonwealth countries, the United States and the Far East (the existing B.O.A.C.) ; (b) routes between the United Kingdom and the Continent and internal routes in the United Kingdom: and (c) routes between the United Kingdom and South America. The corporations will be managed by their own boards, and their capital will be provided entirely by the Government.

The White Paper is nebulous as to the size and constitution of the boards which, it states, must be determined by experience. Provision will be made for them to include persons with expert knowledge of the major aspects of air-line operation, surface transport, and the needs of users in general. This, it is claimed, will facilitate co-operation with the surface transport interests so far as the co-ordination of timetables, joint use of booking facilities, and so on, are concerned. The major policy of air transport development and the broad range of the corporations' activities will be vested in the Minister of Civil Aviation, who will also appoint the members of the boards, but although the Government claims that it does not wish to impose unnecessary limitations on the freedom of management of the three corporations, it remains to be seen to what extent the boards will remain unfettered.

Similarly, they will be responsible for day-to-day maintenance, and arrangements for repairs and overhauls of airframes and engines will be made in accordance with a scheme laid down by the Minister in consultation with the Minister of Supply and Aircraft Production. Admirably though these generalities read, it remains to be seen whether each corporation will be left entirely free to adopt its own methods. As to aircraft, it will be the Government's policy to require the corporations to use British aircraft types, but initially the services must be run by aircraft developed from basic military types. No indication whatever is given, however, as to whether the corporations will be free to place orders for new types of machines which they require designed for their particular purposes.

The White Paper states it is proposed to afford opportunities to officers of the R.A.F. and Fleet Air Arm to enter civil aviation, but it is pointed out that only relatively few openings are probable. The corporations will be required to ensure satisfactory conditions of service and welfare for all employees and to promote schemes to facilitate staff co-operation in management. Machinery will be established to enable the public to make representations as to fares, rates, and adequacy of services on internal routes, but conditions on external routes will have to be by international agreement.

As to the financial arrangements, the Government considers that air services should be made self-supporting as soon as possible, and will seek to eliminate all forms of subsidy, but it recognises that some measure of State aid may be necessary to support essential but unremunerative services. Any profits on the services will enure to, and deficits be borne by, the Exchequer, and, until the services are developed, any direct subsidy assistance required will take the form of deficiency grants. During this initial period more detailed control (presumably by the Treasury) over estimates and expenditure will be necessary than when stability has been reached. It is then proposed to base any direct assistance from the Exchequer on a system of agreed estimates of costs and revenues, subject to annual review. To provide incentive to economy, a corporation will be entitled to retain a proportion of any savings on estimated grants, which sum may be expended on general purposes, subject to the approval by the Minister and the Treasury.

It is noticeable, however, that no provision is made for the corporations to publish annual profit and loss accounts or balance sheets to enable the public to judge the financial results of nationalising air services. Other points dealt with cover the requisition of suitable airfields by the State and the permission to private operators to engage in charter and taxi operations—in competition with the corporations—subject to compliance with safety regulations and satisfactory conditions of employment.

Practically nothing is said in the White Paper as to the manner in which the railway companies' facilities are to be used by the corporations, presumably because discussions are still in progress. As to the expenditure incurred by the railways and other interests in developing air services, the White Paper reiterates that the Government does not consider there is any case for payment of compensation for goodwill and accordingly payment will only be made for those physical assets taken over from airlines operating on November 1, 1945. Possibly the debate in the House of Commons on January 24 may provide some further definition,

and, meanwhile, it is of interest that Sir Harold Hartley has resigned from the position of Vice-President of the L.M.S.R. and has accepted an invitation from the Minister of Civil Aviation to become an additional member of the board of the British Overseas Airways Corporation.

The Pullman Car Company

THE results of the working of the Pullman Car Co. Ltd., for the year ended September 30, 1945, show gross receipts to have been £71,780 compared with £53,836 last year, and gross expenditure £44,737 against £13,953 last year. The net receipts came out at £27,043 compared with £39,883. After charging depreciation of rolling stock and buildings the loss for the year's working is £8,353, which brings the debit balance of profit and loss account to a total of £44,699.

In the accounts for the year under review the gross earnings include £37,968, being the sum payable under the compensation agreements in respect of losses on working, and provision for depreciation has been agreed. The amount relating to deferred maintenance which was the subject of discussion with the Ministry of War Transport through the contracting railway companies shown in last year's accounts has now been disallowed and written back. Out of moneys received under the compensation agreements, the company must set aside annually a sum equivalent to the agreed depreciation of rolling stock, etc. This has been done to the extent of £224,163, and the trustees of the non-interest bearing debentures hold £117,167 of these debentures, in addition to British Government securities at cost of £87,127 and £25,000 in cash on deposit.

One hundred of the company's cars were damaged during the blitz and flying bomb attacks, and war damage claims amounting to £43,960 have been approved, but the compensation will not be sufficient to reinstate the damage. In accordance with the terms of the compensation agreement, the compensation payable to the company terminated with the cessation of hostilities in Germany. Negotiations were, however, opened as soon as possible with the interested parties and compensation at the rate of £50,000 per annum was continued for the year ended September 30, 1945, and thereafter at the reduced rate of £40,000 a year, subject to review every three months.

The Argentine Railway Year

NOTWITHSTANDING the ravages of world war, the Argentine railways continue to progress. The annual accounts for the year ended June 30, 1945, indicate that all the companies, except the Central Argentine, fared better than in the preceding twelvemonth, and, compared with two years ago, the position has improved to a commendable degree, as the figures below for the last three financial years show:

	Net receipts	1944-45	1943-44	1942-43
		£	£	£
		('000 omitted)		
Buenos Ayres Great Southern	3,097	1,894	2,348	
Central Argentine	1,991	2,350	1,686	
Buenos Ayres & Pacific	2,398	1,379	1,581	
Buenos Ayres Western	1,004	531	485	
Entre Rios and Argentine North Eastern	857	756	641	
	£9,347	£6,910	£6,741	
	Loss on exchange			
Buenos Ayres Great Southern	1,308	779	967	
Central Argentine	716	847	623	
Buenos Ayres & Pacific	1,111	648	703	
Buenos Ayres Western	404	235	267	
Entre Rios and Argentine North Eastern	261	226	194	
	£3,800	£2,735	£2,754	
	Gross receipts			
Buenos Ayres Great Southern	15,488	13,365	12,143	
Central Argentine	13,880	12,159	10,305	
Buenos Ayres & Pacific	10,159	8,264	7,521	
Buenos Ayres Western	5,383	4,371	4,139	
Entre Rios and Argentine North Eastern	3,183	2,659	2,333	
	£48,093	£40,818	£36,441	
	Working expenses			
Buenos Ayres Great Southern	12,391	11,471	9,795	
Central Argentine	11,889	9,809	8,619	
Buenos Ayres & Pacific	7,761	6,885	5,940	
Buenos Ayres Western	4,379	3,840	3,654	
Entre Rios and Argentine North Eastern	2,326	1,903	1,692	
	£38,746	£33,908	£29,700	

Compared with two years ago, the gross receipts advanced by £11,652,000, but higher working expenses absorbed

£9,000
was
London
£11,652,
British
those
Ce
"V
ind
ref
per
the
for
als
a
be
slo
an

£9,046,000. In consequence, only £2,606,000 more net revenue was earned, of which £1,046,000 was lost in remitting funds to London. Thus, out of additional gross receipts of as much as £11,652,000, only £1,560,000 reached the stockholders in Great Britain. Most of the progress was made during the year recently ended and, on the whole, the future looks promising, though there are factors to be taken into account which may delay full recovery.

Speaking at the annual meeting of stockholders of the Central Argentine Railway, Lord Forres, the Chairman, said: "Without a doubt we are nearing a crisis in the railway industry. . . . We have now reached the stage when our underpinning by the Mitre Law is threatened." Lord Forres was referring to the expiry at the end of 1946 of concessions which permit the companies to import materials for the working of the lines duty free and exoneration from all taxation in return for the payment of 3 per cent. of the yearly net receipts. He also intimated that, although the end of the war presupposes a general return to normal trading and supply conditions, it is becoming evident that the process of readjustment will be very slow—too protracted, in fact, to relieve working difficulties to any great extent during the current period or bring about any radical improvement in the company's financial returns.

On the other hand, Sir Montague Eddy, at the meeting of the Buenos Ayres Great Southern Railway, was able to take a rather more hopeful view and said: "It is gratifying to be able to tell you that arrangements have been agreed upon so that we can again receive fuel oil imports. Tankers have been released and shortly we shall not only be able to reduce the issue price of fuel but also increase the turn-round of our rolling stock and thus increase our earnings. When I left Buenos Aires last month we had arrears of traffic waiting of some 2,000,000 tons. The promise of increasing oil fuel supplies will enable us to clear off these arrears with benefit to our gross receipts." Later he added: "It is not too optimistic to forecast in the not too distant future a considerable reduction in the issue price of fuel, which, coupled with the higher calorific value of oil fuel, should, within a reasonable period, reduce our expenditure on this item very substantially, while the introduction of modern equipment, especially diesel-electric locomotives and traction, can also be depended upon to effect further considerable economy." In reviewing the trend of gross receipts, Sir Montague continued: "The maintenance and gradual increase of our present level of gross receipts and present ceiling for our rates and fares is essential. This depends, however, not only on climatic conditions and world markets, but also on the rapidity of the revival of road competition. This spectre threatens the railway industry in many countries."

An aspect of Argentine railway prospects which has received less prominence recently is the development of air transport. In a country such as Argentina, where overland distances are great and travel uninteresting, there will be an increasing tendency for long-distance passenger traffic and high-rated merchandise to be conveyed by air. It may be that talks with the Argentine authorities envisage the granting of powers to the railways to operate air services. Indeed, the expected new legislation to supersede the Mitre Law at the end of 1946 may be sufficiently comprehensive to include all forms of inland transport—rail, road, air, and water. The future of the British-owned Argentine railways appears to depend on the successful culmination of such negotiations more than anything else.

* * * *

The Railway Position in 1846

THE Railway Board which Gladstone, who had foreseen in 1843 the probability of a riot of speculation in railway promotion, had hoped would guide the development of railways on a basis of a comprehensive, coherent, and national system, as against an haphazard and undirected growth, had ended its brief existence during the 1845 session of Parliament. In spite of the Board having had some influence on Parliament's decisions in 1845 before a combination of powerful interests "backing" particular Bills and the blind popular desire to speculate in railways swept it away, Parliament had passed 120 Railway Acts, that is, approximately half of the Bills presented. Encouraged by the removal of the check which the Board had

formed, speculators persisted in the view that to invest in railways was a sure and easy way to riches, and thus Parliament in 1846 found itself faced with no less than 560 Railway Bills. In addition there were many schemes placed before the public which never reached the Parliamentary stage.

No fewer than 148 of the Railway Bills failed to comply with Standing Orders or were withdrawn by the promoters; 142 were thrown out either by the Commons or Lords; and 270, authorising 4,540 miles (including 812 miles in Scotland and 669 miles in Ireland), received Royal Assent. It is interesting to note that the total mileage sanctioned from 1821 to 1844 inclusive was 3,524, and 2,816 miles were authorised in 1845.

The railway network already had reached most large towns, either in fact or in authorised schemes, and hence most of the 1846 mileage consisted of cross-country routes (for example, Rugby-Market Harborough-Stamford); short direct lines to avoid circuitous routes (for example, Liverpool-Preston); and minor networks round important centres (for example, the North Staffordshire system round Stoke). There were, however, some important new trunk routes, of which the Great Northern Act (London-York, with a "loop" Peterborough-Bawtry, a total of 292 miles) was the most outstanding, although the lines Plymouth-Falmouth, Truro-Penzance, and Aberdeen-Inverness are worthy of remark.

The traffic possibilities of many of the schemes which Parliament sanctioned were far below self-supporting level, and it is not surprising that the powers to construct approximately one-third of the 1846 authorised mileage were either allowed to lapse or abandoned by later Act. A typical example of this was the Liverpool, Manchester & Newcastle Junction Railway, whose 50-mile line was to extend across bleak moorland from a junction near Skipton to a junction near Richmond (Yorks). In some cases, however, Acts passed years afterwards and promoted by new companies covered in part 1846 schemes which had lapsed.

The natural process of large-scale amalgamation, which had commenced with the formation of the Midland in 1844, continued during 1846, when Parliament sanctioned several important combination schemes, notably that creating the L.N.W.R., with a mileage of 379, and that under which the Manchester & Leeds added five undertakings to its system (justifying the change of title to Lancashire & Yorkshire the next year).

That at least enlightened opinion was not entirely satisfied with the railway position is shown by the fact that four Select Committees reviewed various aspects of railways during the 1846 session, the subjects ranging from Private Bill procedure to the welfare of railway labourers. These Committees recognised through the experience of the Railway Mania that Gladstone's views had been sound and permanent Railway Commissioners—they must not be confused with the Railway & Canal Commissioners of a much later date—were established by an Act passed in August, 1846, without any opposition.

The report of the Royal Commissioners appointed in 1845 to investigate the gauge question was presented early in 1846, but no action was taken until August, when the Gauges Act was passed, which, while showing a leaning towards the 4-ft. 8½-in. gauge, not only allowed the Great Western Railway to continue constructing broad-gauge branches in connection with its system, but provided for Parliament reviewing the gauge question, if it thought fit to do so, in relation to each future Railway Bill presented.

Compared with the mileage sanctioned, the 605 miles of line opened for traffic during 1846 seemed negligible. Nevertheless some important stretches of line were included, for example, the North British from Berwick to Edinburgh (leaving only a 64-mile gap from Newcastle to Berwick to be covered by road in the journey between London and Edinburgh); the Lancaster & Carlisle; the Leeds & Bradford; and the Midland branch from Nottingham to Lincoln.

With the publicity which railways had enjoyed during 1844 and 1845, it was to be expected that railway traffic would grow, and thus there was a tendency in 1846 for more trains to be run.

Apart from extending their territories by amalgamations, many of the larger companies also added to their mileage by promoting and supporting new schemes, and on reviewing the position at the end of the year it is possible to trace the outline of most of the systems which formed the constituent companies in the 1921 Railways Act grouping.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinion of correspondents)

Haywards Heath Accident

390, Wakefield Road,
Huddersfield, December 15

TO THE EDITOR OF THE RAILWAY GAZETTE
SIR.—I was astonished to note that whilst the official report on this accident [summarised in *The Railway Gazette* of December 14, 1945.—ED., R.G.] draws attention to the fact that red lights were being shown by certain signals that *did not* apply to the route of the train concerned, only casual mention is made of the crucial fact that signal 36, which *ought to have been showing red* (because a dead stop was required there) was not doing so. The unfortunate driver was actually allowed to run into a short dead-end section with no fixed signal more restrictive than yellow. Is it not axiomatic that if a dead stop is required in darkness a red light must be shown? In this case there was not even a red light on the buffer stops.

The report indulges in some speculations on the consequences of the "violent jolt" in passing through crossover 44, and yet the only person (the guard) who could give any evidence on this point reported that he did not notice any abnormally violent jerk.

The question as to whether the driver had seen the special working notice seems to me to be irrelevant, and indeed the report itself admits as much in the paragraph beginning "It is axiomatic that drivers must at all times be prepared to conform to signal indications." There is no evidence that this driver failed so to conform. His speed through crossover 44 appeared to some witnesses to be excessive, but his judgment on the matter was justified inasmuch as the train got through it without mishap.

Yours, etc.,
W. A. TUPLIN

"U.S. and U.K. Motor-Car Prices"

The Society of Motor Manufacturers & Traders Limited,
148, Piccadilly, London, W.I. December 14

TO THE EDITOR OF THE RAILWAY GAZETTE
SIR.—My attention has been drawn to your November 30 issue in which you refer to "U.S. and U.K. Motorcar Prices."

The information you give does not provide an accurate presentation of the facts because you compare U.K. car prices, which include purchase tax, with U.S. prices, which (a) do not include such loading, and (b) you give no indication of the dollar rate of exchange used in the computation.

In all fairness, I feel sure you will agree that your readers should have their attention drawn to this matter.

Yours, etc.,
H. D. SIMMONS
Public Relations Officer

We agree that the British prices include purchase tax; in this country the amount represents part of the price. Even for the export trade, however, the amount of the tax in no instance is sufficiently great to offset the very marked disparity in the American and British prices. Perhaps Mr. Simmons would care to let us have for publication the figures adjusted in accordance with purchase tax and whatever reasonable rate of exchange he chooses.—ED., R.G.]

"Demobilisation of Railway Staff"

Richmond, Surrey. December 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—With reference to the article on the subject of "Demobilisation of Railway Staff," as one who, during six years commissioned service, has discussed the matter many times with serving railwaymen in movement control and transportation units, I have formed the opinion that a surprisingly high number of the younger railwaymen who have "made good" in the Services are not going to return to their former employment unless they are given some definite indication that their prospects of advancement are good.

These men are the first to admit that it is difficult for an employer to make any such promises, but I wonder whether railway officers are aware of the feelings of a large number of commissioned railway employees, who are now beginning to be released? The cases of the booking-clerk and shunter, who are now Brigadier and Group Captain, are difficult enough, although not numerous, but there are many hundreds of Lieut. Commanders, Majors, Captains, Squadron Leaders, etc., who have cases for consideration, who have performed duties of far greater responsibility in their respective arm

of the Service than they would have done had they remained with their railway employer during the war. The emergency gave these men the opportunity to show their worth, previously stifled or dormant, and they are now aware that they are fitted for something more remunerative than punching tickets or coupling wagons, at a wage now lower than that of a dock worker.

The prospect of possible selection for special training with no guarantee of promotion, is not sufficient for the demobilised officer, and he is naturally going to try to better himself in other fields where his increased ability is more highly rewarded.

Most officers and N.C.O.s. in Transportation units have had the opportunity to increase their railway knowledge and efficiency considerably, and it is questionable whether the chief railway officers are acquainted with details of the work performed during this war by their absent employees, and that (more fortunate than the railwaymen in the R.N., infantry or R.A.F.) they will return to civil railway life, trained for immediate employment. Whether nationalisation comes or not, the railways of this country are going to need every keen man with initiative and ability they can get in the coming years, and unless they can make a firm, attractive offer of a future with prospects to the returning officer, they will lose many good men to other industries.

Yours, etc.,
CLASS FOUR CLERK

Recent Locomotive Designs

Abington, Cambridge
December 7

TO THE EDITOR OF THE RAILWAY GAZETTE
SIR.—Your correspondent, Mr. T. Fairless, in his letter in *The Railway Gazette* of November 23, makes a number of erroneous deductions from statements in my letter appearing in your issue of September 14, and winds up with some suggested further comparisons of the three locomotive designs in question, which fail to survive practical analysis. My letter was intended to show—which still remains true—that from a practical point of view the pull-speed curve for the C.U.R. 2-10-0 locomotives given by Mr. Fairless in his article in your September 7 issue, was incorrect for the speeds from about 10 m.p.h. upwards when the engines are burning the fuel—oil—for which the boiler is designed; and that his method of evaluating boiler capacity failed on a fundamental point if proper account was not taken of the fuel which boilers were intended to burn.

The remark in my previous letter that Mr. Fairless's method was "correct when the fuels are similar" means exactly what it says, and he admits its correctness by now suggesting different pull-speed curves for the two austeries, as he considers his method shows they would be if burning oil. It is noted that he agrees with my practice, as set out in my previous letter—not, as might be inferred, originating from his last letter—of an allowance for the increased effectiveness of heating surface of oil-fired boilers; I gave 12 per cent., whilst he now suggests 10 to 15 per cent.

Mr. Fairless goes astray, however, when suggesting that on oil-fuel the austeries would be more effective than the C.U.R., because he omits to allow for another practical fact, indicated I thought sufficiently in my previous letter, that the austeries' boilers were not "particularly" suited to oil fuel as is, "naturally," the C.U.R. boiler, namely, that the best type of firebox for coal is not the best for oil fuel, and vice versa. The advantage of greater starting power and lower-speed hauling capacity of the C.U.R.—of prime importance for its intended traffic-operating conditions—would still extend into the higher-speed range because the particular form of firebox adopted enables a higher "percentage of increased heating surface effectiveness on oil fuel" factor to be attained than in fireboxes of modern "wide" coal-burning pattern as are the austeries. If the moderate factor of 12 per cent. taken by the present writer for the C.U.R. boiler be considered applicable to the austeries when put on oil fuel, then the C.U.R. factor would need be of the order of 18-20 per cent. over coal-burners. Certainly there are many locomotives operating on oil in which "wide" fireboxes are used—some of the present writer's designs amongst them—for other reasons than "fuel-power" efficiency, such as narrow-gauge locomotives or where it is impracticable to get a sufficiently large firebox in any other way, etc.; but this does not affect the fundamental facts.

Mr. Fairless also suggests that the C.U.R. firebox is of orthodox coal-burning pattern; on this I disagree completely. If these engines had been required primarily as coal-burners the fireboxes would have been entirely different; "narrow" fireboxes are long out of date for coal abroad—no new loco-

motives by the present writer have ever had narrow fire-boxes for coal, for instance. Mr. Fairless further suggests that an increased depth of throat-plate was achieved in the C.U.R. boiler "by adopting a between-wheels firebox at the expense of a greatly reduced grate-area"; this is certainly a travesty of the reasons why the present writer designed that particular firebox; the real reasons are indicated generally above and somewhat amplified below. The introduction of grate area considerations into a comparison between coal- and oil-fired boilers—as seems to be inferred in Mr. Fairless's remarks—where no grate exists and consequently no questions of "depth of fuel bed," "air entrance," "coal fired per hour per sq. ft. of grate," etc., arises, is not understandable. The path of greatest intensity of the fuel-flame bulk is quite distinct and the region of major effect from radiant heat in the firebox consequently different from a coal-burning boiler. What count in a locomotive firebox for burning oil are its length in proportion to its width, depth, and—naturally—the internal surfaces; it should not be overlooked that the C.U.R. firebox, notwithstanding its much less area where the grate would be if there was one, has 189 sq. ft. heating surface (including siphon) compared with 192 sq. ft. (including arch-tubes and combustion chamber) of austerity 2-10-0. So much for the fallacy of considering "grate area" (*sic*) in comparing an oil-fired boiler.

The austere's boilers could operate with oil fuel, but this is a very different thing to burning it with the same relative efficiency—that is, work done per unit of fuel consumed—as they would coal or the C.U.R. burn oil. In this connection it should be noted that of the flue-tube heating surface of austerity 2-10-0 (austerity 2-8-0 has less "equated heating surface" than C.U.R. and is out of the picture), no less than 1,169 sq. ft. derives from 152 tubes of only 1½ in. outside diameter, having a length of 15 ft. 8 in.; this is a high internal ration of no less than 1 to 115.5, whereas for a coal-burner such proportions are preferably kept within 1 to 90-95. The 2-8-0 austerity has 1 to 92, whilst the C.U.R. oil-burner, where a somewhat more restricted gas passage may be used, because of the nature of the fuel, has 1 to 98.

It is not overlooked that in his original article Mr. Fairless includes a variable in his factor of evaporation for tube length *per se*, but a considerable additional difference will arise in practice when the relation between tube-area and length is attenuated unduly. Incidentally, if correspondingly proportioned tubes to austerity 2-10-0 had been used, the C.U.R. boiler could have been packed with 1½-in. outside diameter tubes instead of its 2-in. tubes, with a consequent appreciable increase (on paper) in its boiler capacity, but even though an oil burner its practical efficiency would be less. This point brings to light another possible source of error within the method of evaluation proposed by Mr. Fairless, namely, that in addition to an unsuitable firebox, a boiler might have other features out of proportion for the fuel to be used and yet become evaluated at an apparent equality with a better proportioned boiler.

Mr. Fairless finally concludes that the austere's would be equally, or more, effective on coal than the C.U.R. on oil. The actual facts—and the pull-speed curve he correctly gives up to 10 m.p.h. in Fig. 1 of his original article—refute the suggestion. The R.T.F. of the C.U.R. locomotive is 7.3 per cent. greater than austerity 2-10-0—being able to apply this within an axleload limit of 13½ tons by virtue of the more even driving torque obtainable from its three cylinders—and whilst its boiler can, with a boiler factor of 13.1, supply steam to meet the demands of its haulage requirement up to the speeds at which it is desired to run, its initial advantage will extend over the full range of its practical work.

As to a comparison with austerity 2-8-0; from Mr. Fairless's own figures and calculations in his original article in your issue of September 7 this engine has 14 per cent. less R.T.F., and from 3 to 5 per cent. less heating surface, rated evaporation, boiler horse-power and "equated heating surface" (without regard to what fuel is burnt), all in his table of "fundamental factors of design" on page 249 of that issue, and correspondingly shown on his own Fig. 1 as the least powerful of all three locomotives; yet he now suggests not only that austerity 2-8-0 should perform, on an equality of fuel, better than C.U.R., but equal or better on coal than the C.U.R. on oil fuel! If Mr. Fairless really suggests that a locomotive having greater tractive power, larger boiler, and all other boiler capacity criteria superior—by his own calculations—plus 10 to 15 per cent. or more, greater boiler effectiveness by reason of oil fuel and a better torque from three cylinders, is nevertheless to be "definitely concluded" to be less effective, then the validity of his suggested method of evaluation becomes decidedly open to question; inspection of his Fig. 1

correctly shows austerity 2-8-0 consistently the lowest of the three designs on an equality of fuel, hence the additional advantages of C.U.R. cannot cause a reversal of position; the C.U.R. locomotive, in fact, could handle a weight of train which neither of the austere's could even start. Your correspondent seems to be losing sight of practical considerations; the common pitfall of over-simplification in standardising methods or machinery—or even statements as in this case.

Mr. Fairless refers to an evident discrepancy in certain heating surface figures. I have therefore looked up the original description of the C.U.R. locomotives in your issue of March 9 last, and I find, as he states, that some error has crept into the abbreviated table given. In preparing for the press, the figures for total evaporative and equivalent superheater surfaces, respectively, were apparently "telescoped," and the resultant shown as flue-tube heating surface with the net superheater surface also inserted! The correct figures as originally set out by Mr. Fairless in Uruguay and so transmitted by the writer from there, were as he states; the point does not, however, affect the present question, because Mr. Fairless has based his comparisons and views, as also has the present writer, on the correct figures, namely: firebox and siphon, 189 sq. ft.; flue-tubes, 1,642 sq. ft.; total evaporative, 1,831 sq. ft.

P. C. DEWHURST

Shortage of Maintenance Staff at Locomotive Depots

13, Freshfields Avenue,
Upminster, Essex. December 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—It has been stated in Parliament that the inadequate and overcrowded service between Liverpool Street and Gidea Park is mainly due to the shortage of maintenance staff at locomotive depots. Unfortunately the four main-line companies do not encourage the best type of skilled labour to seek work at locomotive depots.

Main-line companies pay up to £5 7s. 6d. a week for skilled fitters; this compares very unfavourably with other firms, for example, London Transport pays £5 17s. 6d. a week, plus two suits of overalls a year, and a free pass—available on buses, trams, and tubes—which operates immediately the employee joins the board. Again, many private firms pay £6 to £7 a week for a skilled man, plus overalls, or a monetary allowance for dirty work.

Is it to be wondered at that skilled men—many of whom are ex-railway shop employees—seek more lucrative and cleaner work in better conditions than those existing in many locomotive depots.

I suggest that skilled men would consider locomotive depot work if the companies adopted the following proposals:

1. Increase the wages by £1 to £1 10s. a week.
2. Provide two suits of overalls a year; drivers and firemen—whose work is less dirty—are in receipt of this privilege.
3. Abolish the three months waiting period for privilege tickets.

In short, improve the conditions and the labour will be forthcoming.

Yours, etc.,
G. B. DREW

"Merchant Navy" Class Locomotives

Beyer, Peacock & Co. Ltd.,
Abbey House, Westminster, S.W.1.,
December 28

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—With reference to the interesting editorial in your December 21 issue on Mr. Bulleid's "Merchant Navy" class locomotives, there is a small point which we suggest should be corrected in the interests of accuracy.

In the third paragraph the Nicholson thermic siphons with which the engines are fitted are mentioned. These, however (two siphons in each firebox), were made not at Eastleigh, but by Beyer Peacock & Co. Ltd. at Manchester, where X-ray examination was also carried out as a normal routine. Mr. Bulleid mentioned this in his reply to the discussion at the recent meeting of the Institution of Mechanical Engineers.

Incidentally, it might be mentioned that we have manufactured over 400 thermic siphons during the last 15 years and no complaints have ever been received from the overseas railways to which they were supplied.

Yours faithfully,
W. CYRIL WILLIAMS,
Sales Director

The Scrap Heap

"Surely there is some method of getting sardines out of their containers without key-openers?" grumbles a correspondent. On



[Reproduced by permission of the proprietors of "Punch"]

the Underground, for instance, they use sliding doors:—From "Charivaria" in "Punch."

* * *

Sixty-one thousand people, described as the highest number in the history of the Great Western Railway, travelled from Paddington on long-distance trains on December 27.

100 YEARS AGO

From THE RAILWAY TIMES, Jan. 3, 1846

SHORTEST AND BEST ROUTE TO THE CONTINENT, by the South Eastern Railway and Continental Steam-Packet Company's Ships.

Down Trains.—From London-bridge Terminus at 9 a.m., 11.30 a.m., 12.45 p.m., 2.15 p.m., 4.45 p.m., 5.45 p.m., and 8.30 p.m.

From Bricklayers' Arms Terminus at 7.15 a.m., 1.15 p.m., and 3.15 p.m. (express train).

Of the afove the 12.45 p.m. and the 2.15 p.m. are short trains to Maidstone.

Up Trains.—From Dover at 1.30 a.m., 6.45 a.m., 9.30 a.m., and 11.30 p.m. (express train); 12.45 p.m., 2.20 p.m., 4.15 p.m., and 5.30 p.m.

Sunday Trains.—From London-bridge at 10 a.m., 2.30 p.m., and 8.30 p.m.

From Bricklayers' Arms at 7.30 a.m., and 6.15 p.m.

From Dover at 1.30 a.m., 7.15 a.m., 9.45 a.m., 2.45 p.m., and 6 p.m.

A courier's carriage from the Bricklayers' Arms, at 11 p.m., is attached to the goods train. Fare, 18s. for each passenger.

Steam-boats between Folkestone and Boulogne:—

	From Folkestone, at	From Boulogne, at
3	1.15 p.m.	Noon.
4	2.0 p.m.	1.0 p.m.
5	3.0 p.m.	2.0 p.m.
6	4.0 p.m.	3.0 p.m.
7	5.30 p.m.	6.0 a.m.
8	6.30 a.m.	6.30 a.m.
9	7.0 a.m.	6.30 a.m.

From Dover to Ostend

Sunday, Jan. 4, at 6.0 a.m.

Thursday, — 8, at 4.30 a.m.

Sunday, — 11, at 7.0 a.m.

Thursday, — 15, at 3.30 a.m.

Returning every Tuesday and Friday.

Apply at the South Eastern Railway Office, London-bridge; or at any station on the South Eastern Railway; or at the Harbour Office, Folkestone.

RAILWAY QUESTIONS AND ANSWERS

Statement: If proof is needed of the efficiency of State-owned railways one need only point to the wartime record of Russian railways, which handled the longest communication lines of any war in history.

Answer: In times of national emergency railways, whether privately owned or State-owned, become a military instrument and have to work efficiently no matter what the cost or how far other interests, including those of the civilian, have to be subordinated. The efficiency of the Russian railways under such conditions is not proof of the efficiency of State ownership and the experience of the railways of the United States in World Wars I and II is illuminating. In the first world war the U.S. railroads were taken over by the Federal Government which accumulated a deficit of about \$2 millions a day in operating them. In this way the railroads, still under private ownership and management, are now paying taxes to the Federal Government at the rate of \$4 millions a day—a difference between the two wars of \$6 millions daily. The cumulative difference up to December, 1944, was \$5 billion. From "Answers to Questions and Statements," issued by the British Main-Line Railway Companies, 22, Palace Chambers, London, S.W.1.

* * *

RAILWAY TRAVEL IN THE U.S.A.

In his latest book, "Immortal Years (1937-1944)," Sir Evelyn Wrench pays this tribute to American railways:—"We spent several weeks in trains on our three transcontinental journeys, on our excursion to Mexico City and on trips along the Atlantic and Pacific railroads. By making our plans in advance we nearly always obtained a drawing-room compartment. . . . In its seclusion we passed busy and happy days; there we attended to our large correspondence and kept our records up to date. I was able, without interruptions, to dictate to my wife. On subsequent wanderings on other continents we have often thought longingly of the comfort, cleanliness and quietude of American air-conditioned travel."

That is a fine compliment to the American lines, but it should be explained that Sir Evelyn Wrench did all his travelling before April, 1941, so that he did not see the U.S.A. railways operating under wartime conditions.

* * *

OPERATING ODES

(Control Office Efficiency)

Now e'en as far as Scotland
Had spread the envied fame
Of train control at Blankbridge
(That's not its proper name).

Determined I would see it
And check results obtained,
I went there by appointment
With int'rest quite unfeigned.

They showed me the control room
With nought apparent there
To give results like they had,
'Twas quite a tame affair.

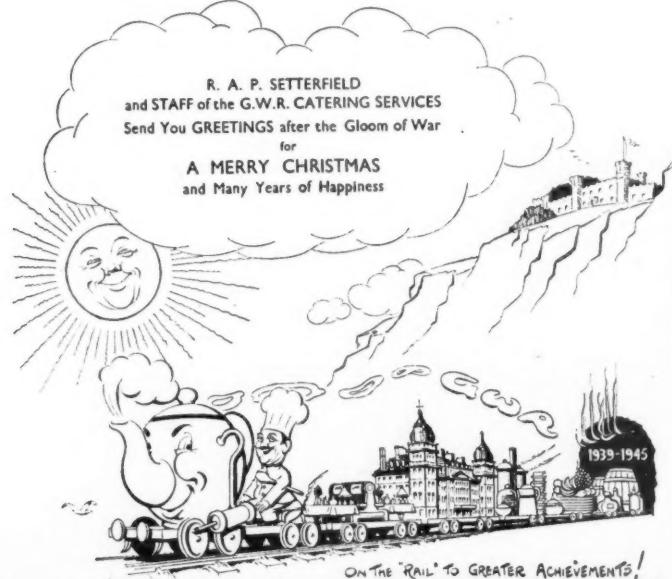
But stay. In farthest corner
A closed door bears the lay
"For Chief Controller Only."
I bent my steps that way.

My guide commanded silence,
With high uplifted hand,
From those around the tables
(A noisy, bick'ring band).

The door was slowly opened
And in a cushioned chair
Was seen the chief controller
With concentrated air.

His face was stern and rigid.
He held, with trembling hand,
His knowledge of the future,
A Crystal, on its stand.

H. W. W.



Originality in Railway Departmental Christmas cards has been rare this year. The G.W.R. catering services have provided a bright exception

In
Kur
469
Rule
Pure
boar
illega
stuff
amo

Sin
Tran
cussi
tions
auth
the
the
ciati
M
seng
pres
crea
long
coule
servi
from
railw
Edw
of r
The
on
mar
Mod
ties
wher
take

T
cienc
seng
any
the
Edw
who

In
train
recor
253
spec
coach
and
requ

T
stru
new
whic
£2.5
thes
ling
sent
sary
har
ham

A
cide
the
Car
Um
alre
latt

January 4, 1946

THE RAILWAY GAZETTE

9

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

Railway Offences

In a recent period of 20 days, Mr. Riaz Kureishy, Special Magistrate, sentenced 469 persons under the Defence of India Rules, the Indian Railways Act, and the Pure Food Act for travelling on the footboards off railway trains; for travelling illegally; and for selling adulterated foodstuffs at railway stations. Fines were imposed ranging from Rs. 5 to Rs. 100, amounting in all to Rs. 4,406.

War Transport Member Meets Passengers' Association

Sir Edward Benthall, Member, War Transport Department, recently had discussions in Bombay on transport questions with the Port, Railway and Priority authorities, the Government of Bombay, the Bombay Chamber of Commerce and the Passengers and Traffic Relief Association.

Mr. D. C. Mody, President of the Passengers and Traffic Relief Association, pressed for more coaches to meet the increased passenger traffic on suburban and long-distance trains. Sir Edward said he could not give an assurance of better service until more carriages were released from military use. As to a rumour that railway fares were to be increased, Sir Edward said that there was no intention of raising fares in the immediate future. The employment of released war workers on new construction schemes was a primary consideration, but he assured Mr. Mody that provision of increased amenities at stations would not be lost sight of when more expensive schemes were undertaken.

The Association pressed for more efficient and cheaper service from the passengers' point of view as the result of any rail-road co-ordination schemes which the Government might contemplate. Sir Edward assured his listeners that the whole idea was to provide a more efficient service, and to regulate the fares.

N.W.R. Military Specials

In October, 1945, 305 special military trains were run on the N.W.R. This is a record; the previous highest figure was 253 run in July, 1945. In addition to the specials in October, over 1,000 additional coaches were attached to ordinary mail and passenger trains to meet military requirements.

SOUTH AFRICA

New Mechanical Shops

The largest item on the Natal reconstruction programme is the erection of new mechanical workshops at Durban, which are to cost approximately £2,500,000. The allocation of the site for these workshops, and for a new marshalling yard which is to adjoin them, presented certain difficulties as it was necessary to ensure that future traffic and harbour developments would not be hampered.

After careful consideration it was decided to locate the workshops and yard at the head of the bay, south of the Umbilo Canal. The necessary canalisation of the Umbilo River and the reclamation work already has been put in hand and, for the latter work, soil from the administration's dredgers, working in Durban Bay, is being

pumped ashore on the area by means of a special reclamation plant operated by a private contracting company.

Since the layout and construction of the marshalling yard is dependent on the completion of the workshops site, the reclamation of the former area cannot be proceeded with at the moment. It is, however, expected that this work will be started soon. Meanwhile, exploration work is being carried out in connection with the foundations for the workshops, for which allowance has to be made for column loads up to 350 tons.

In planning the new marshalling yards, which are to cost nearly £650,000, consideration has been given to the provision of direct connections with the main line, the Maydon Wharf industrial area, and the line to Wests; and for the arrival and departure of traffic to and from various lines without crossing over other tracks. The yard will extend from a point near the Bluff line at Wentworth Station right across the head of the bay.

Train Letter Service Restored

Train letters for conveyance by the first available train may now again be handed in at railway booking offices. This system, which was in operation throughout the Union before the war, was suspended on June 7, 1940, at the request of the censorship authorities. Only letters addressed to points within the Union, South-West Africa, Lourenço Marques and the section of the Rhodesian railway line between Ramathlamba and Bulawayo are accepted.

The system is of considerable benefit to the public in that it enables urgent letters to be despatched after the ordinary post has closed and also provides a more expeditious service between points where there is no direct mailbag service. At the time of the suspension of the scheme, an average of more than 17,000 letters was dealt with monthly.

Railway Plans for Greater Durban

Durban has a share in the reconstruction programme of the South African Railways, exclusive of the amount to be spent on the national airport at Merebank, of nearly £4,000,000. Work on several of the major items is in progress. Traffic and operating requirements have been carefully studied by technical officers, and railway and harbour services in Durban are being brought to the standard of efficiency that has always been a feature of railway organisation in Natal, with provision for future expansion.

To alleviate the congestion of traffic in the Durban area, the lines between Clairwood and Isipingo; Clairwood and Wests; and between Rossburgh and Seaview, are all being doubled. This work, which received priority of treatment on account of its immediate urgency, is practically completed.

UNITED STATES

Further C.T.C. Installations

Centralised traffic control is to be installed by the Chicago, Milwaukee, St. Paul & Pacific Railroad over 98 miles of single-track main line between Aberdeen and Mobridge, South Dakota, with a style "C" control machine located at Aberdeen. The Wheeling & Lake Erie Railway is equipping similarly a length of 56½ miles of single track from Brewster to

Adena, Ohio, with the control machine in the dispatcher's office at Brewster. A third installation is to be that of the Union Pacific Railroad over 22 miles from Levin to Lemay, continuing the existing c.t.c. from Lemay to Bridge, and all centrally controlled from the important traffic centre at Ogden.

Streamline Services

With the forthcoming transformation of the "Exposition Flyer" to a diesel-hauled streamline train (see *The Railway Gazette* of November 23 last), the name is to be changed to "California Zephyr," uniformly with the "Zephyr" series of streamliners operated by the Chicago, Burlington & Quincy Railroad, which is one of the partners in the service.

The six stainless-steel ten-coach trains required have been ordered from the Edward G. Budd Manufacturing Company, at a cost of \$10,500,000, which will be shared between the Burlington and its two partners, the Denver & Rio Grande Western and Western Pacific Railroads. In view of the exceptional scenic attraction of the route, the stock will include some of the new "Vista-Dome" carriages of Budd design, for both sleeping-car and coach passengers, and the schedules will be so arranged that the route west of Denver, which includes the 9,200-ft. altitude of Moffat Tunnel, and the famous Feather River canyon, 116 miles long, on the Western Pacific, will be covered in daylight. This will be the first time that Denver, capital of Colorado, and Salt Lake City, have had through high-speed communication with the Pacific coast.

Another company which is about to make its first investment in diesel-operated streamline trains is the St. Louis-San Francisco Railway, known generally as the "Frisco Lines," which has obtained the approval of the Federal District Court in St. Louis to purchase three streamline trains with diesel-electric power, and three diesel-electric locomotives. Two of these will replace the existing steam-hauled "Meteor" between St. Louis, Tulsa, and Oklahoma City, and the third will work turn-and-turn about with a new Missouri-Kansas-Texas streamliner between St. Louis and Dallas, Texas, as the "Texas Special."

Steel Rail Tonnages Rising

The production of steel rails for railway use in 1944 reached the highest total attained since 1939. The total in 1944 was 2,490,656 tons, an increase of 363,660 tons, or 17·1 per cent., on that of the previous year, but fell considerably short of the 3,603,767 tons attained in 1926. The year 1929 was the last before the depression in which 3,000,000 tons was exceeded, and the total in 1930 was just over 2,000,000 tons—an aggregate not reattained until 1942. In the worst depression years, 1932 and 1933, only 450,874 and 466,252 tons of rails respectively were supplied to the railways.

Of the 1944 total, rails weighing between 100 and 120 lb. per yd. exceeded 1,000,000 tons for the first time since 1929, and rails of 120 lb. per yd. and over fell but little short of that figure; the precise totals were 1,032,556 and 894,245 tons respectively.

Steam-Diesel Test on the Union Pacific

Comparative tests between steam and diesel-electric operation are to be made by the Union Pacific Railroad through the Wasatch mountains, between Green River, Wyoming, and Ogden, Utah. The steam locomotives, which work fast

freight traffic over this 176-mile section, are the largest and most powerful in the world; they are the so-called "Big Boy" type, 4-8-8-4 articulated locomotives, which with their 14-wheel tenders weigh 534 tons in running trim. In identical service conditions they are to be tested against two four-unit diesels of 6,000 b.h.p., now under construction. One of the latter will be of the Electro-Motive type, and the other of the Fairbanks-Morse opposed-piston type.

ARGENTINA

Institute of Transport

The annual general meeting of the Argentine & River Plate Centre of the Institute of Transport was held recently in Buenos Aires. In presenting the annual report, the Chairman, Mr. P. Goddard, said that the membership of the centre totalled 207, as compared with 219 on September 30, 1939. He regretted to announce the death of three members since the last annual general meeting, namely, Mr. J. Harding and Mr. Frank Lewis (Associate Members), and F/Lt. C. N. Drable, R.A.F.V.R., who was killed in a flying accident. Mr. Goddard called attention to the plan to set up in Argentina, under the auspices of the Institute, an organisation to promote the study and discussion of local transport problems by Spanish-speaking transport.

Mr. Goddard's term of office as Chairman having expired, he is succeeded by Mr. C. Clarence Horton. Mr. A. T. Nixon did not stand for re-election to the Committee, and has been replaced by Mr. W. A. Pickwoad, O.B.E.

The officers and members of the Committee for 1945-46 are: Messrs. C. Clarence Horton (Chairman), W. A. Pickwoad, O.B.E., and R. Veitch (Vice-Chairmen), R. V. Cable (Honorary Treasurer), A. C. Wren (Honorary Secretary); and P. Goddard, F. A. Bottomley, F. C. Egerton, A. Lowe, F. B. Lowry, R. W. Walker, and S. E. Warner (Members).

BRAZIL

Rail Production

The Cia Belgo-Mineira was the first to make steel rails in Brazil, but after manufacturing a light type in its works at Sabará, decided to leave development to its new works at Monlevade. Here the manufacture of rails as an industrial undertaking began in October, 1943, and by December of that year 800 tons of rails had been rolled. These were of the A.S.C.E. 60-lb. type, which is now mostly in demand by the metre-gauge railways, which are gradually eliminating the 22-kg. 6-m. and 25-kg. 10-m. types.

Notwithstanding the engagement of numerous foreign specialists, production was low in the first months of 1944, as local operatives were lacking in experience. At this time an output of from 100 to 120 rails a day was considered good, but these totals have risen gradually to 330 a day and on one occasion a record output of 443 rails was achieved. Average monthly production is approximately 50 km. of rail, equal to 25 km. of single track.

The rails are subjected to a hammer-blow test of 1,000 kilograms from a height of 4.80 m. and Brinell standards are observed for hardness. Fractures noted so far have averaged 6 to every 1,600 tests, and in every case the fault has been in the rolling of the soles. Brinell hardness has been approximately 240 against the minimum of 210 generally accepted. Results of tensile tests have varied around 80 kg./mm.², with some tests at 72 kg./mm.², against the standard minimum of 70 kg./mm.². The analyses usually made from the runs of steel employed in the rails never exceed the maximum limits of 0.04 per cent. for phosphorous and 0.06 per cent. for sulphur.

Coaches Ordered from Britain

A contract has been signed between the Central Railway and the Metropolitan-

Vickers Electrical Co. Ltd. for the purchase by the railway of 90 passenger coaches, 30 first class and 60 second class, to supplement those that have been in service since electrification began. The first three coaches will be supplied within 29 months and thereafter nine a month until the order is completed. The transaction is said to be valued at £1,000,000 sterling. [See also *The Railway Gazette* of August 17, 1945.]

The contract was signed at the headquarters of the Central Railway in the Dom Pedro II terminal station by Lt.-Colonel Napoleão de Alencastro Guimaraes on behalf of the railway, and by Mr. Harry Walter Foy representing the Metropolitan-Vickers Electrical Co. Ltd. The Commercial Adviser to the British Embassy, Mr. A. H. W. King, was also present.

Electrification of Auxiliary Line

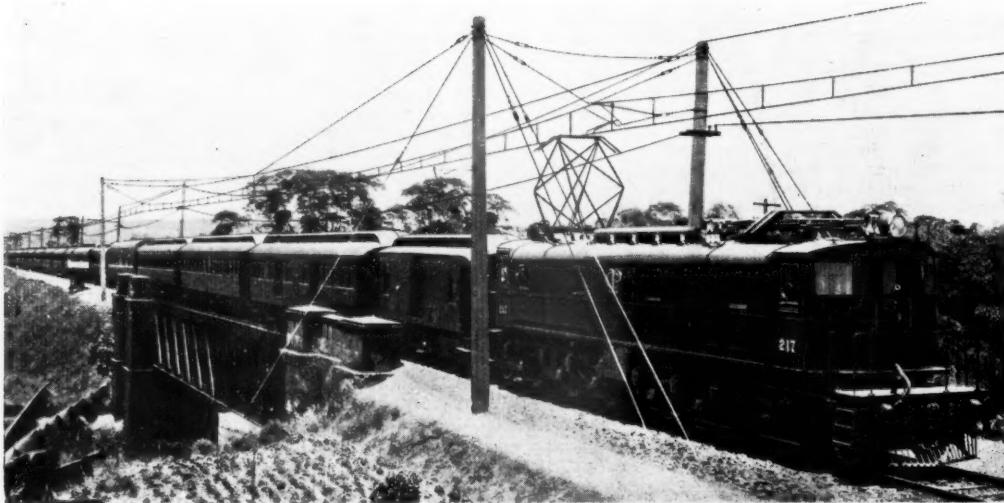
The first section of this line, between São Christovão and Honório Gurgel, some 20 km. long, was converted to electric traction in July, 1945. The line serves a growing suburban area of Rio de Janeiro and an average of 50,000 passengers a day travels over the section now electrified.

Purchases from Britain and U.S.A.

Purchases of material to the value of Cr. \$120,000,000.00 for further electrification, and of diesel locomotives and of freight wagons to the total value of Cr. \$180,000,000.00 have recently been made by the Central Railway in the U.S.A. and Great Britain.

Some 66,000 tons of rails have also been received from the U.S.A., and they will be used on extensions towards the north-east, which, when completed, will link up the town of Santana do Livramento in the southernmost State of Rio Grande do Sul with the town of Natal in the State of Rio Grande do Norte in the north of Brazil.

Electric Traction on the Paulista Railway, Brazil



The conversion to electric working on the Paulista Railway of Brazil, which was commenced in 1922, has resulted in some marked economies in working costs per train mile; the respective figures for steam and electric operation, according to a recent issue of "The Metropolitan-Vickers Gazette," average 69.92 cents and 22.97 cents respectively. The above illustration shows a Metrowick 2-6-6-2 locomotive supplied to the railway; it weighs 100 tons in working order, and has a nominal rating of 2,380 h.p., 3,000 volts d.c.

Jan

Note
andIN a
script,
1945,
(India
notes
clusion
the s
In
at thvast
terri
was
Ind
tena
Oper
orig
bro
fron
pur
was
58
gau
mil
con
brig
mil
use
sta
dat
C
dra

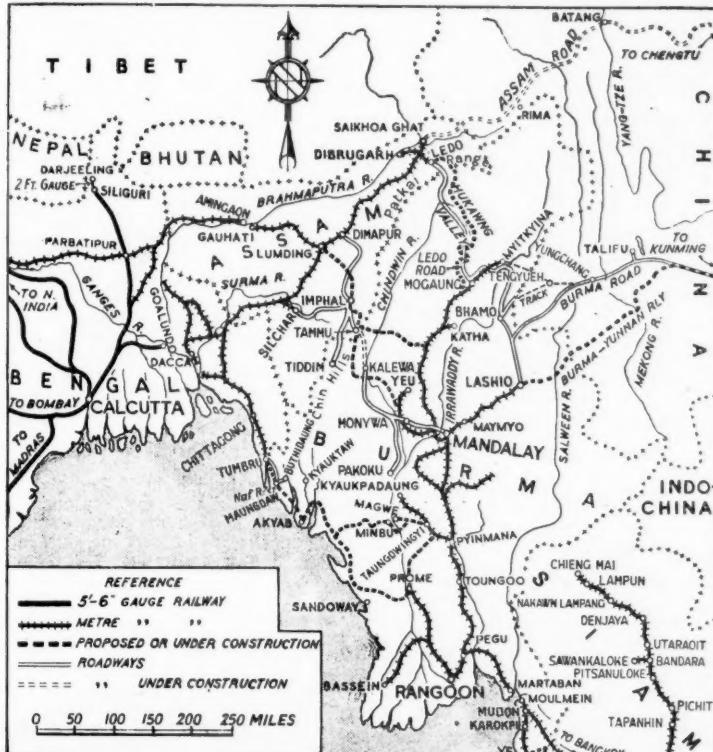
Bengal Assam Railway Lines of Communication for the Burma Campaign

Notes on the construction work in doubling 170 miles of metre- and 58 miles of broad-gauge line to enable 7,000 tons a day to be carried

In an article entitled "Assam Lines of Communication—A Technical Postscript," contributed to the September, 1945, issue of the *N.W.R. Magazine* (India), "R.O.C." amplifies his earlier notes in the same publication by the inclusion of facts and figures previously on the secret list. The following are some of the salient points in that article.

In September, 1943, the Railway Board, at the request of G.H.Q., undertook a

ing their first monsoon, without stone ballasting. Lifting and packing was made possible by the use of sand and shingle-surface dressing mixed with clay. Sections of new bank were "rolled in" by use, at restricted speed, as auxiliary single lines with stop-dead-and-proceed under hand signal rules at stations. In some instances, however, American maintenance forces disregarded warnings and endeavoured to lift the track on stone ballast, with the re-



Sketch map showing lines of communication between India and Burma

vast doubling programme. State—now termed "Government"—railway staff was primarily employed, assisted by Indian Engineer Construction and Maintenance units, Pioneers, and Railway Operating units, British and Indian. The original plan was to double 98 miles of broad-gauge and 534 miles of metre-gauge, from Abdulpur to Parbatipur and Parbatipur to Tinsukia respectively. When work was closed down in the spring of 1945, 58 miles of broad- and 170 miles of metre-gauge had been doubled, and some 100 miles of additional earthwork had been completed. Many incomplete minor bridges were abandoned, but nearly 12 miles of the double-line embankment were used to extend the loops of about 50 stations to 4,000 ft. length, to accommodate 125-car trains.

Clay embankments, thanks to being thoroughly packed and scientifically drained, were fit for light, slow traffic dur-

sult that waterlogged pockets formed and the earthwork slumped.

Difficulties of Line Occupation

The greatest difficulty encountered in this work of doubling was line occupation. Though the target for military lift was always in excess of operational capacity, 1,125,000 tons of construction materials were carried, despite the following handicaps. Construction trains were stalled by Traffic at wayside stations for days and even weeks awaiting promised working blocks. Detailed programmes for delivery of construction materials at points where labour was waiting to use them, were wrecked by the removal of the engines to meet traffic emergencies. In desperation at the conditions, contractors deserted the work and resorted to claims. Materials, however urgently required, could not be moved without meeting difficulty over train paths, controls, permits, or priori-

ties. Special trains arranged with great difficulty through the proper priority control, to bring in imported labour, were stopped *en route* by some official or other, and the coolies were turned out and the stock commandeered. With demands on facilities of all kinds far in excess of resources, every service was interested only in meeting its own target dates.

For instance, a whole season's work was lost on between-station construction jobs, because the bricks required were purloined forcibly under military "protection" or disappeared into neighbouring camps. Even after such "mistakes" had been admitted, and apologies given, no amount of writing could get fresh consignments of bricks to those outlying sites in time to be of use that season.

A large construction staff under a senior officer was fully employed on "chasing" lost consignments and missing wagons of material. Escorts were not always adequate remedies as they were liable to forcible removal by other services, or were forced to desert, due to exhaustion of food on journeys taking weeks instead of days. Wagons seldom arrived with their labels intact and, instead, destinations were painted on them. Even so, the wagons were not detached at those stations, and in many instances consignments passed through a destination three times in alternating directions before being secured by infuriated consignees, and chained and padlocked in a siding.

Scores of thousands of labourers had to be imported for the work, usually in special trains arranged through a centralising quasi-military authority and with the greatest difficulty. On arrival, they had to be housed and rationed in a country already "eaten out and built out," in fact a green desert. When the Japanese reached Kohima, within 40 miles of the railway, in the spring of 1944, construction priorities fell to zero in the resulting "flop."

Under the conditions described above, the assistance afforded by the large number of Railway (Transportation) Construction and Maintenance R.E. and I.E. units was invaluable. Military technical units are expensive, but their high proportion of officer supervision, disciplined organisation, freedom from rationing and housing problems (from the civilian point of view), simpler accounts procedure, and access to military sources of supply of plant and stores, combine to insure their freedom from most of the obstructions to progress that were met with by civilians on the Assam L. of C., especially east of the Brahmaputra.

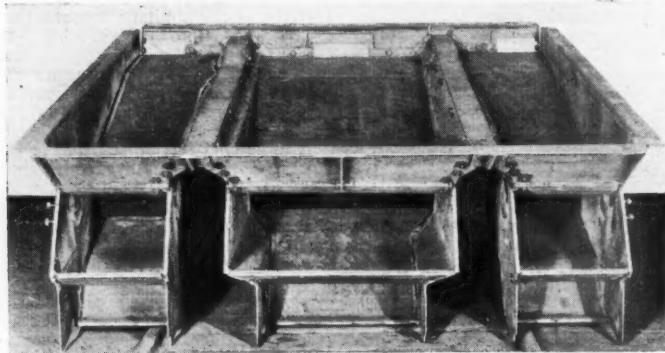
Major Bridging

Originally, some 25,000 ft. of major bridging was included in the doubling programme, but when they took over, the Americans decided to work short single-line sections over the big bridges, and this policy and the cancellation of long lengths of doubling reduced this bridging by about 85 per cent. This reduction included the abandonment of the Brahmaputra bridge at Amingaon, on which construction had begun, because it was found that the three wagon-ferrries, then working, were able to carry the required volume of traffic. The largest bridge completed, therefore, was the Beki, consisting of seven 150-ft. spans built on well foundations 70 ft. deep. The construction of this bridge in the remarkable time of eight working months, a feat previously considered by the Americans to be almost impossible, was described in our issue of November 30, 1945.

(Continued on page 14)

Some Notes on the "Merchant Navy" Class Locomotives, Southern Railway—3*

Mr. O. V. S. Bulleid's account of how operating requirements dictated the design, and how permanent way restrictions were overcome in its development



THE three ashpans are designed to ensure a free flow of air over the whole grate area and to avoid the restrictions in the space under the grate, along the sides, experienced with the single central ashpan. Each section is fitted with self-cleaning ash hoppers fitted with curved doors, all operated from the ballast. A small additional cleaning door at the back enables any ash accumulation at the rear to be dislodged.

Three separate cylinder castings are used. They are not in line, the inner cylinder being behind the outer cylinders and higher in the frames; all three drive the middle coupled axle. The outside cylinders are shown in Fig. 5. The incoming steam enters the casting at the top flange leading to the cored pipe feeding the steam chests at each end. The total volume of this pipe and the two end steam chests is 2.6 cubic ft., or 105 per cent. of the cylinder volume at the full cut-off of 70 per cent. The port area is 36.8 sq. in., opening to an area of 254.5 sq. in. through the cylinder barrel. The clearance volume is 9.8 per cent.

The exhaust port through the valve is 40.7 sq. in. in area and discharges directly into the valve cavity between the two valve heads. It passes through the exhaust pipe flange in the case of the outside cylinders, to be taken by a fabricated external exhaust pipe to the centre casting, where the three exhausts join under the common blastpipe. The cylinder castings have been simplified by this arrangement.

As to lubrication, it was felt that the steam locomotive had reached a stage of development in which it was desirable to enclose as much of the motion as possible, so that continuous flood lubrication could be adopted. The parts are less accessible if enclosed, but if the results desired, namely, no attention between general repairs, reduced wear, and freedom from heating, were achieved, this would not matter.

The problem is complicated by the

relative movement of the frame to the crank axle and especially so in the case of an engine with an inside crank axle. In the engine in question, not only was it decided to enclose the three sets of valve motion but also the middle connecting rod, crosshead, slide bar and crankpin. Moreover, the three sets of valve gear had to be located between the frames. This meant that the inside piston rod and the three valve guides had to be taken through the leading end of the casing (Fig. 6).

Flood lubrication was adopted as being simpler when oscillatory movements are involved. Two reversible gear pumps of normal design (chain-driven from the valve crankshaft) draw oil from the sump and force it through distributing pipes from which it is discharged over the moving parts.

As the middle big-ends tend to throw oil off during the upper half-revolution, it was fitted with a tundish which collects the oil during the lower half-revolution and retains it during the upper. The forked type of big-end is used, as with this design the brasses are well supported and the oil ways are more conveniently arranged. The brass back, too, forms a useful oil holder.

The method adopted to prevent oil escaping when the crank axle passes through the casing is shown in Fig. 6. At first, trouble occurred due to the pumps becoming choked with fluff from cleaning cloths, and so on. Leakage of oil from the sump was also considerable at first, but this loss has been reduced, and the consumption is now reasonable. The special oil for the enclosed system is of the non-emulsifying mineral type, with corrosion and oxidation inhibitors.

The special conditions were such that no existing valve motion could be accommodated satisfactorily in the very restricted space available. Moreover, it was desirable to keep down the unsprung weight of the driving crank axle; then, too, should it be necessary to remove the driving axle, as little of the sump as possible should be disturbed.

The new valve gear used on these engines was therefore invented, each piston valve being operated by an independent set of motion (Fig. 6). The three sets of gear are operated by a three-throw secondary crankshaft. Each throw of this

secondary crankshaft oscillates its quadrant link by a vertical connecting rod pinned to an arm extended backwards from the link; at the same time, it reciprocates the foot of the combination lever by a horizontal link pinned to the big-end of the vertical connecting rod. The quadrant link operates the upper end of the combination lever in the usual manner.

The combined motion is conveyed through a plunger working in a guide, by the valve rods to the valve-operating rocker shaft. Provision has been made for the frame to rise 2 in. and fall $1\frac{1}{2}$ relatively to the crank axle and for this axle to move sideways as much as $\frac{1}{4}$ in. from its mid-position. By locating a layshaft 4 ft. from the crankshaft centre, the maximum rise of the frame meant a lengthening of the hypotenuse by 0.04 in., a negligible amount in a chain 11.8 ft. long consisting of 118 links. The layshaft in turn drives the three-throw crankshaft by a second chain. As the chain wheels are equal in diameter, the three-throw crankshaft is driven truly in phase with the crank axle.

The power required to overcome the frictional resistance of an 11-in. piston valve not under steam pressure and cold, was found experimentally to be 3 h.p. at 300 r.p.m. As there were no data on the behaviour of chains under locomotive conditions nor on the maximum load the chain might have to transmit, nor on the effect of snatch, a chain 2 in. wide was fitted. This chain will transmit 75 h.p. at a chain speed of 130 ft. per min.

The weight of the toothed wheel secured to the axle is 125 lb., and half the weight of the chain is 30 lb., a total of 155 lb. Three eccentrics plus the portion of the eccentric rods carried by the axle would have weighed 1,281 lb., so the new drive reduces the unsprung axle weight by 1,126 lb.

The valve motion itself has given no trouble and has one especially commendable feature in that the valve events remain unchanged in service, the engine keeping its regular beat.

A point that was considered was the effect of slackness in the chain. Assuming a sag of as much as 3 in., the design of the rocker chain is such that most of the sag under load is absorbed by the rise of the rockers up the teeth. Only the small remainder affects the valve events, which will be delayed. This can be corrected by altering the cut-off. The chain drive has behaved well, and no chains have broken to date.

For locating motion pins, and so on, "circlips" of both internal and external types are used in place of conventional methods using taper pins or washers and split pins. The circlip, designed so that the moment of inertia of the cross-section at any point is proportional to the bending moment at that point, can be removed and replaced without detriment to its material. This application, new to locomotive practice, has proved satisfactory in service, no failures due to their use having been reported. The total number used, in all positions, is 99 per engine.

With higher pressures, piston valves with inside admission and outside exhaust have been favoured, to reduce the pressure on the valve spindle packings. The arrangement interferes with a free exhaust and the gland trouble is not eliminated.

In these engines a new method of operating the piston valves has been introduced, each pair of piston valves being driven by a rocker in the exhaust cavity. No valve spindles are used and so the glands are suppressed and with them the

* Paper by Mr. O. V. S. Bulleid, Vice-President I.Mech.E. (Chief Mechanical Engineer, Southern Railway), presented before the Institution of Mechanical Engineers on December 14, 1945. Abridged. Part 1 appeared in our issue of December 21, and Part 2 in our issue of December 28, 1945.

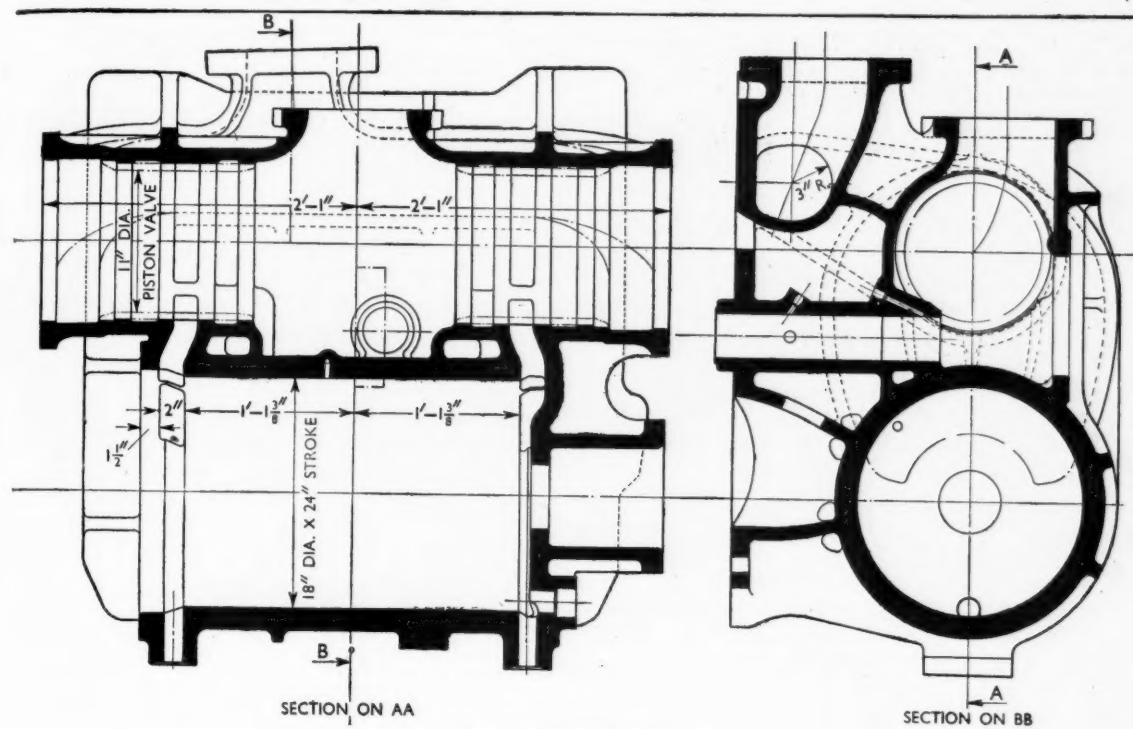


Fig. 5—Outside cylinders

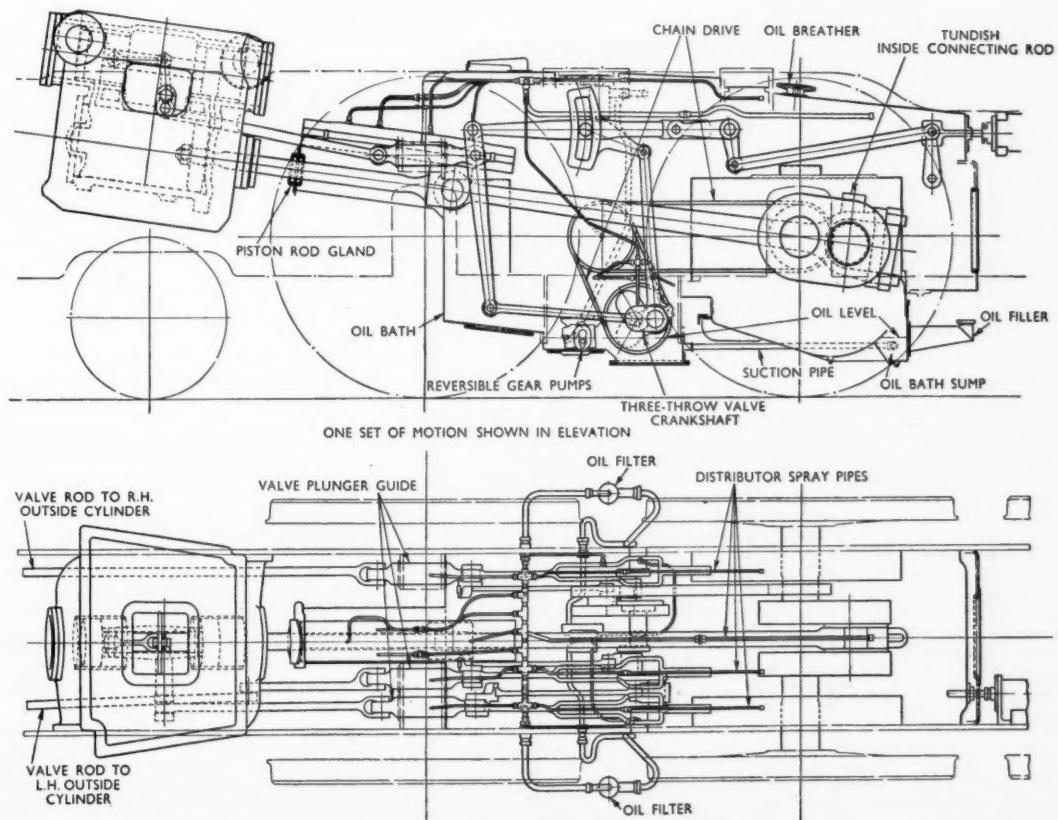


Fig. 6—Oil bath arrangement showing chain drive

objection to outside admission. The rocker is arranged across the cylinder and when uncoupled the arm in the exhaust cavity drops clear to allow the piston valves to be withdrawn. The arrangement is shown in Fig. 6. Piston valves 11 in. dia. have been provided, which, in conjunction with large steam chest liner port areas gives an improved steam distribu-

left cylinder and the back by a 6-in. pipe from the 7-in. pipe to the right cylinder. It was expected that the pressures would equalise through the header.

Dr. H. L. Guy suggested it might be due to a sudden rise in pressure at the moment the valve uncovered the port to admit steam to the cylinder, resulting in a pressure difference on the two valve heads.

cylinder block connecting the two steam chests.

The method of lubricating the valve rockers is shown in Fig. 6.

The gear is reversed by steam. The objection to steam reversing gears frequently expressed in the past was found to be due to the steam-operated gear not remaining set. Large oil passages are

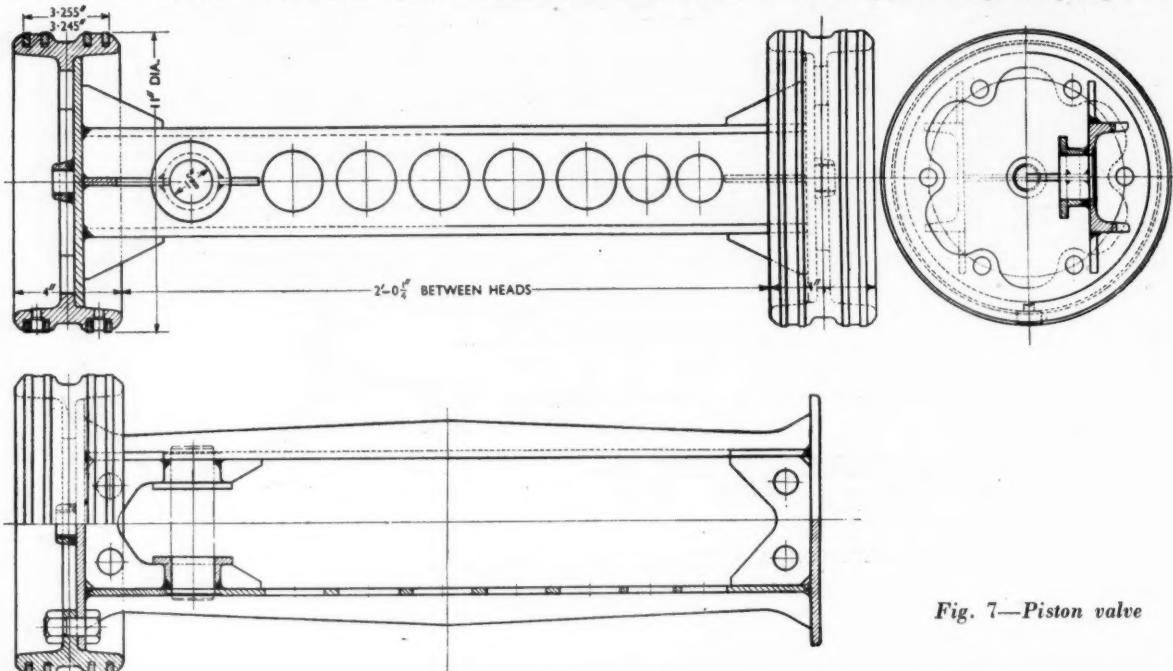


Fig. 7—Piston valve

tion. The weight of one piston valve complete with the two heads is 99 lb. (Fig. 7).

This arrangement of the piston valves has given no trouble and the wear of the rings is much less than usual. Trouble was experienced with the first engines in the early days through the breaking of the driven arm of the piston valve rocker shaft of the middle cylinders. The cause was difficult to trace. The middle cylinder as first made did not incorporate any balancing passage between the two steam chests. The front steam chests were fed by a 6-in. pipe from the 7-in. pipe to the

An indicator diagram taken from the forward steam chest showed that the steam pressure was not steady but varied continuously, though without any violent differences. It was argued that if the variations in the two steam chests did not coincide in point of time, there would be a difference in load on the two piston valve heads and this difference, if large, would throw a heavy load on the driven crank. An external balancing pipe was fitted and no further trouble was experienced. The middle cylinders now incorporate two balancing passages, each 12.6 sq. in. in cross-sectional area, cast in the

provided from the filling plug to the ends of the hydraulic cylinder, which constitutes the damping and locking device. Creeping was due to the hydraulic cylinder not being completely full of oil. This was traced to air bubbles entrapped when filling, giving a false indication that the cylinder was full, and since attention has been given to the filling pipes and passages to prevent air being entrapped, the cylinders can be filled right up. The gear will now remain in the position at which the driver sets it.

(To be continued)

Bengal Assam Railway Lines of Communication for the Burma Campaign

(Concluded from page 11)

The 43-mile Lumding-Manipur Road (Dimapur) section was the most difficult to construct. It passes through the densest variety of jungle, and amenities for the labour were at a minimum. Desereted by their coolies, contractors came and went in relays over a period of about two years, until eventually this section was taken over by the Army and finished by military engineers and Pioneers with the aid of pile-driving and other plant supplied by the civilian construction staff.

Thus, some 230 miles of line in all were doubled, but the doubling was by no means the only work falling upon the shoulders of that staff. Depots with many miles of track, engine sheds, watering arrangements, transhipment sheds with powerful gantry cranes, scores of additional four-line crossing stations, workshops, stations, offices, and thousands of

quarters had to be built to assist in increasing the capacity of the line as the L. of C. for the Burma campaign. The target figure demanded by the Military was 7,000 tons a day, necessitating the running of 44 trains—22 in each direction—on some sections of this long and mainly metre-gauge railway. Reference is made to this working in an editorial note in this issue.

EAST KENT ROAD CAR CO. LTD.—At the annual general meeting of the East Kent Road Car Co. Ltd., at Canterbury, on December 17, Mr. Sidney Garcke, the Chairman, in the course of his speech, said that the past year had been exceptional in that they had benefited by the best of both war and peace conditions. They had carried a record of 53,900,000 passengers, which compared with 45,500,000 in the last pre-war year. In ordinary times they had very slack winters, but last year they were still experiencing exceptional wartime activity, but from now onwards they must

expect to revert to ordinary conditions. As it was not reasonable to suppose that the present high working cost would drop back to a material extent, increased charges to the public in the not very distant future was a real possibility. Their immediate difficulty was to handle the traffic, and until quite recently staff shortage had been the limiting factor. The critical matter had now become shortage of rolling stock and buildings. More than any other company, it had suffered from destruction of buildings due to enemy action, for more than half of them had been seriously damaged or totally destroyed. In connection with the proposals to bring the railways under National ownership, the Government regarded it as essential that the road passenger transport undertakings should be fully co-ordinated with the National scheme, but from the point of view of the public good it was difficult to see any advantage. At any rate they already had very full co-operation, not only one undertaking with another, but also between the bus systems and the railways.

Mechanised Goods Shed Operation, L.M.S.R.

All-electric equipment for handling 11 million consignments a year at Lawley Street Depot, Birmingham



In our November 2 issue we gave an account of the opening by the Lord Mayor of Birmingham of the L.M.S.R. mechanised goods shed in Lawley Street. In carrying out the permanent reconstruction scheme at this depot, consequent both on the fire in 1937 and damage which was sustained by enemy action during the war, the L.M.S.R. decided to provide:—

(a) A goods shed to deal with the 2½-million tons of miscellaneous traffic passing to and from Birmingham, including that formerly dealt with at Central Goods Depot. The central main span of the new goods shed at Lawley Street is 151 ft. and there are only three rows of columns within the whole of the shed, thus affording maximum freedom of movement. This has been made possible by the decision to reproduce the destroyed warehouse accommodation on an entirely separate site from that occupied by the goods shed, instead of above it.

(b) A new block of offices, to be connected with the new goods shed by a subway.

(c) A separate four-storey general warehouse to provide 26,625 sq. yd. of floor space.

(d) A separate single-storey warehouse, mainly for the storage of non-ferrous metal, with a floor space of 3,000 sq. yd.

Under war conditions, it has been possible to complete only the main goods shed. This was given preference because of the assistance the facilities would give in the prompt unloading of traffic and so avoid congestion on the running lines, especially to and from the West of England. The new goods shed was taken increasingly into use, as more of it was completed, from the early part of 1944 onwards.

There was not the same urgency under war conditions to provide the new office block and the general warehouse, but now that the war is over it is hoped these will be started at an early date. Work on the metal warehouse is well advanced.

Lay-Out of Lawley Street Depot

The depot covers an area of over 50 acres and when the reconstruction scheme is completed it will provide siding accommodation as under:—

320 wagons under cover in sheds and warehouses.

280 wagons in the open yard, with cart-roads for coal traffic.

400 wagons in the open yard, with cart-roads for dealing with merchandise in full wagon loads.

880 wagons in arrival, departure and storage sidings.

590 wagons in marshalling sidings.

The depot is equipped with wagon traverser and capstans for the rapid positioning of wagons in the sheds and warehouses, thereby reducing shunting by engine. There is a 20-ton electric Goliath crane and four road mobile cranes of 2-3 tons capacity in the goods yard.

The plan of the new goods shed which is now operating, is shown on page 16; the shed roughly forms a rectangle about 650 ft. long by 350 ft. wide and covers an area of approximately 54 acres. It comprises two sections, one primarily for miscellaneous traffic to be forwarded from Birmingham and the other for the incoming traffic.

The forwarded section contains eight wagon roads on which 203 rail wagons can be set. Alongside the wagon roads are paved cartroads and the vanmen who collect the goods from the Birmingham traders take their vehicles directly alongside the appropriate rail vehicles into which the goods are loaded direct from the road van by 25-cwt. mobile electric cranes; these have been specially designed with jibs which can be lowered to the horizontal so that they can pass inside rail vans with a load on the hook, as shown above.

For sorting very miscellaneous cartage loads a small deck is provided immediately inside the west end of the shed where the traffic can be re-sorted on to pneumatic-tyre drays (designed for this purpose) before being taken to the wagons for loading. At this end of the shed there is also a small two-storey office with a walk-away from which the supervisory staff secure a good general view of the shed.

The miscellaneous traffic received by wagon, which has to be sorted and assembled into cartage loads for delivery in the Birmingham area, is dealt with in the "received" portion of the shed and the layout and the machinery are unique. Forty loaded wagons can be set on four wagon tracks, arranged in two pairs, each with a conveyor running between them;

the traffic is discharged from the wagons directly across a narrow deck and placed on the conveyors label uppermost, first from one raft of loaded inwards wagons and then, whilst these wagons are being withdrawn by capstan and other loaded wagons set in their place, from the wagons on the opposite of the conveyor. This practice of discharging from alternate sides of the conveyors avoids the staff having to wait for work. Each of the four conveyor sidings in the shed is served by a separate loaded wagon road, and empty wagon throw-out road, outside the shed. The consignments out of any wagon may be for delivery in any part of Birmingham and its suburbs or may require reforwarding by rail. At the sorting end of the conveyors the traffic is sorted on one side of the conveyor into four main divisions for delivery in the Birmingham area and, on the other side, into four main divisions for traffic requiring to be reforwarded by rail.

Consignments for delivery in Birmingham are sorted on to four-wheel trolleys termed "flats," for subsequent sub-division in each case to 12 delivery vehicles, thereby covering the 48 delivery rounds into which the Birmingham area is divided. Each "flat" carries on average 25 cwt. of goods, and as the traffic from either of the two conveyors may be for any part of Birmingham, arrangements are necessary to convey any particular "flat" to any one of the four final sorting sections. This is achieved by using what is called a "flat" traverser which is described later.

The traffic for further rail transit from Birmingham is sorted on to pneumatic-tyre drays, on the outside of the conveyors, opposite to the "flats." Each dray is hauled by an electric tractor, forming an articulated unit with the dray, to the west end of the forwarded wagon roads. These horses in patent, light-tubular shafts, are attached to the drays by an automatic coupling and the vehicles are hauled to the wagons, where the traffic is loaded for despatch. Each dray contains traffic for a pair of wagon roads served by intervening cartway.

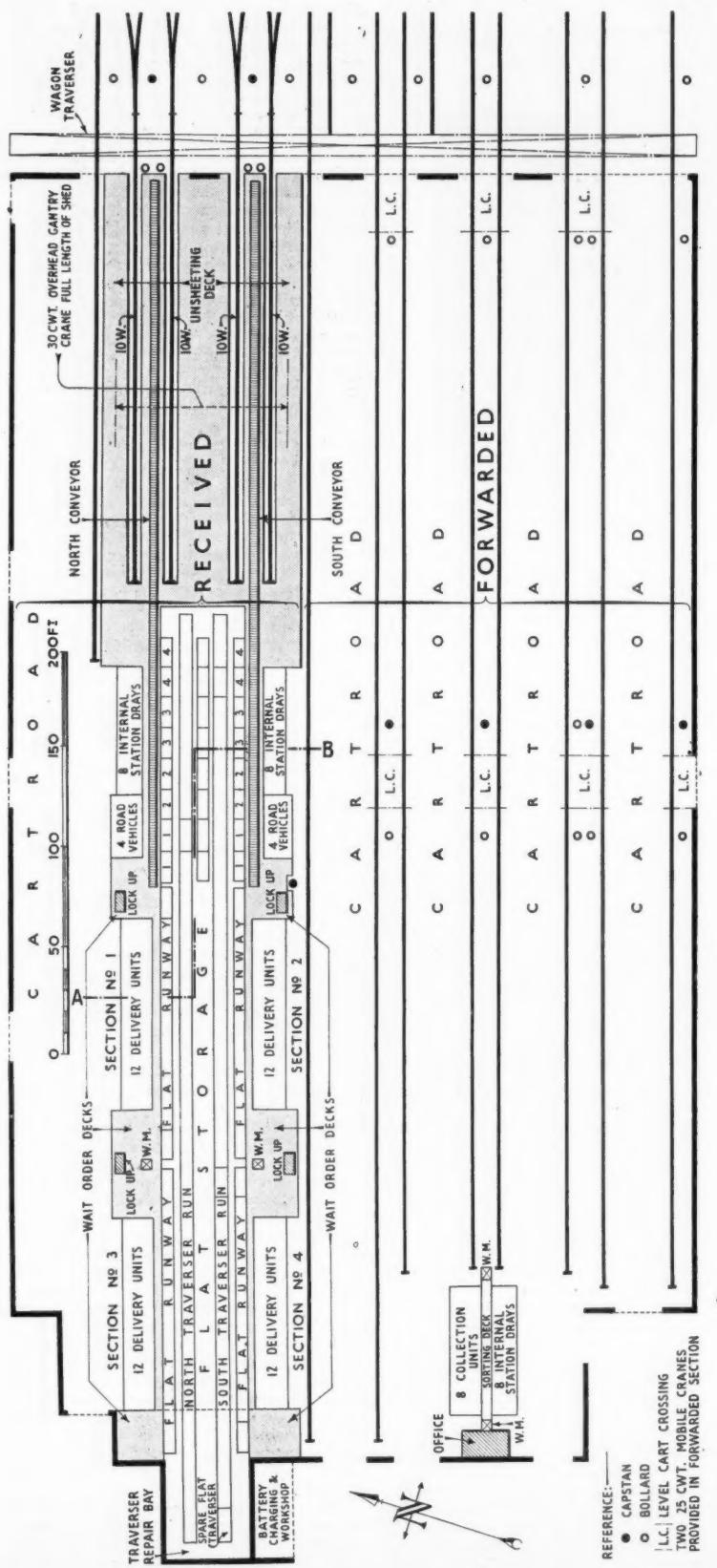
The whole of the received section is spanned by an overhead travelling crane of 30 cwt. capacity.

A portable plant has been provided for the purpose of testing the vacuum brakes on rail vehicles and this plant can be moved to any part of the goods shed to make the requisite tests.

Constructional Details

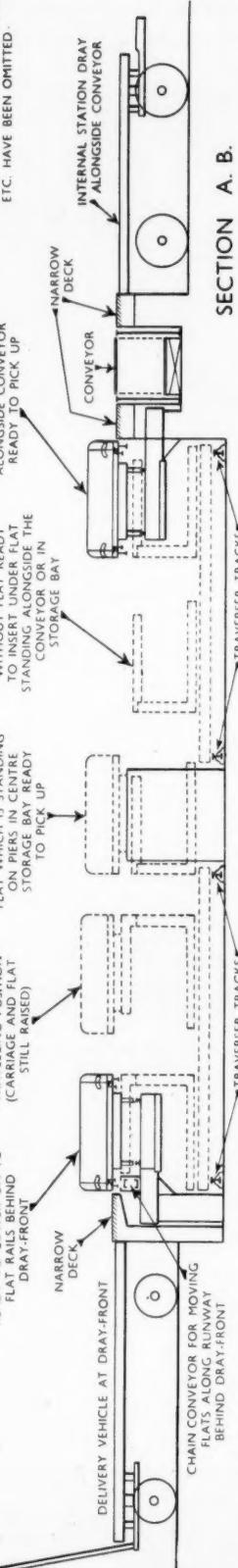
The shed has been constructed to meet intensive operating requirements; the whole layout is conditioned by the methods for the handling of the goods outlined above. Thus the forwarded section required a number of roads where the road vehicles could be taken directly alongside the rail vehicles. This postulated the maximum unobstructed space and to meet this requirement, the main section of roof is in one span of 151 ft. with columns at 50-ft. centres. The clear span over the conveyor portion was determined by the decision to provide an overhead crane in this section; this fixed the span, which is 86 ft. 8 in., and the height of the roof, which is somewhat higher than that of the rest of the shed. To meet these requirements it was necessary to use a steel-frame structure, and, to reduce the load on the roof span the lightest possible form of covering, consistent with efficient maintenance, was provided.

The roof trusses are spaced at 35 ft. centres. These carry purlins at approximately 6 ft. 6 in. centres to which protected metal roof covering is fixed, except where patent roof glazing is provided, to give



NOTE.—ONLY OUTLINES OF TRAVERSER SHOWN (DOTTED)
TRAVERSER PLATFORM, CONTROLS,
ETC. HAVE BEEN OMITTED.

SOUTH TRAVERSER
WITH CARRIAGE IN
TRAVELLING POSITION
WITHOUT FLAT READY
TO INSERT UNDER FLAT
STANDING ALONGSIDE THE
CONVEYOR OR IN
STORAGE BAY



Plan and cross-section of Lawry Street, Birmingham, mechanised goods shed

good
which
area,
higher
point.
The
with
bottom
protective
The
con-

Ex-
equipped
lanes
are 1
stands
rope
min.
motor
to ei-
from
wide
attack
of 4
each
is,
vevo
its m
coupl
inadv
until
strike
conv-

The
town
6 ft.
wheel
axles
carry

The
as c
load

vide
kept
desi
thei
trav
und
elev
"fla
cross
the
mot
var
whi
in d
direc

good natural lighting. This roof glazing, which is equal to 30 per cent. of the floor area, has been so placed to provide the highest intensity of natural lighting at the points where this is required.

The sides of the shed are also covered with protected metal except that the bottom 9 ft. 6 in. is built of brickwork with protective timber buffers.

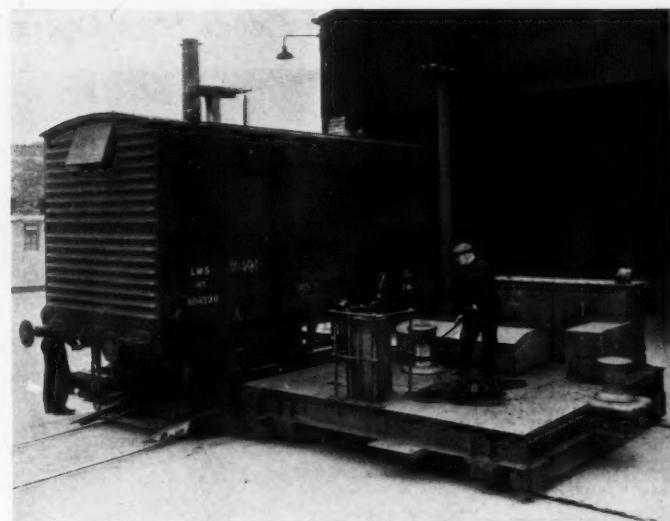
The floor of the shed is laid with concrete.

Mechanical and Electrical Equipment

Extensive mechanical and electrical equipment is provided for sorting miscellaneous goods traffic. Incoming wagons are positioned in the shed by electric capstans. These capstans give a pull on the rope of one ton at a speed of 150 ft. per min. and are each powered by a 15-h.p. motor. Each moving deck conveyor, on to either of which the goods are discharged from the wagons, is 360 ft. long and 3 ft. wide and is formed of hard wood slats attached to steel chains driven at a speed of 40 ft. per min. The driving unit in each case is situated below deck level, that is, at the delivery terminal of each conveyor. The 15-h.p. electric motor transmits its motion to the chains through a fluid coupling and gearing. Should a package inadvertently be left on either conveyor until it reaches the end terminal it will strike a vertical plate and stop the conveyor.

The "flats" on to which the traffic for town delivery is sorted, are 14 ft. by 6 ft. 6 in., and are mounted on flanged wheels running on a 3-ft. gauge track; the axles are mounted in roller bearings. They carry a maximum load of 30 cwt.

The fully-loaded "flats" are transported as complete units to the appropriate cart-loading bays by means of the "flat" traverser. Three of these machines are pro-



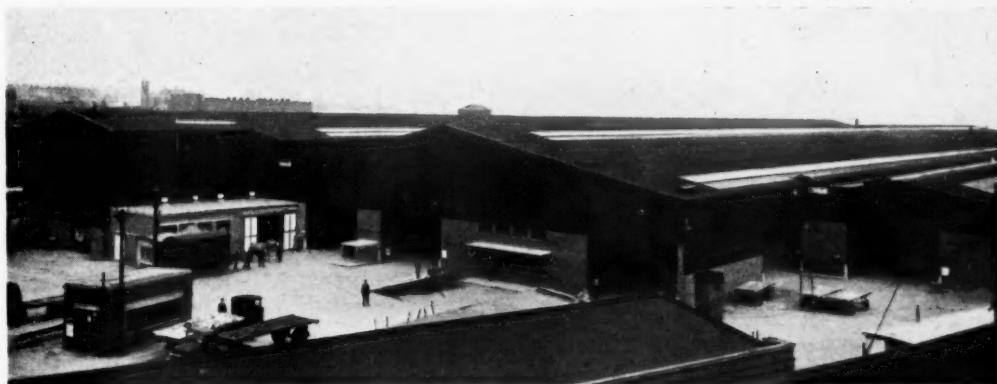
The 20-ton electrically-propelled wagon traverser which operates across the east end of the shed by power from overhead conductors

vided; two are always in use and one is kept in reserve. The traversers are designed to travel at 500 ft. per min. along their tracks and incorporate a cross-traverse carriage, which can be projected under the "flat" to be moved, and an elevating mechanism which raises the "flat" clear of its supports. The loaded cross carriage can then be retracted into the centre position for travelling. The traverser is driven by a 20-h.p. electric motor through the intermediary of a variable-speed hydraulic gear. The hand wheel controlling the travel when rotated in one direction produces motion in that direction, and rotation in the opposite direction from the neutral position reverses

the travel. The speed of travelling is proportioned to the amount the control wheel is rotated, $\frac{1}{4}$ of a turn in either direction giving the full range of speed. A very slow creeping speed is obtainable for positioning the traverser accurately at the loading and discharge points which are clearly marked by indicators.

The cross traverse movement is effected by hydraulic power obtained from an independent unit driven by the same motor as for the long travel motion. The hydraulic power is admitted to one of two cylinders

the loaded "flat" from one traverser to the other by way of the series of island piers situated between the two traverser runways) is deposited on its wheels at the reception end of the cart bay. There the dray loading staff transfer the goods from the "flats" of the town delivery vehicles. The "flats" are moved along behind the town delivery vehicles, by the dray loaders, as most convenient to the work. This is done by utilising the hand levers on the "flats"; movement of the lever on the "flat" by the dray loaders brings a shoe



General view of the exterior of the mechanised goods shed

vided; two are always in use and one is kept in reserve. The traversers are designed to travel at 500 ft. per min. along their tracks and incorporate a cross-traverse carriage, which can be projected under the "flat" to be moved, and an elevating mechanism which raises the "flat" clear of its supports. The loaded cross carriage can then be retracted into the centre position for travelling. The traverser is driven by a 20-h.p. electric motor through the intermediary of a variable-speed hydraulic gear. The hand wheel controlling the travel when rotated in one direction produces motion in that direction, and rotation in the opposite direction from the neutral position reverses

which is selected by means of a control lever adjacent to the driver's hand. The elevating motion is by an independent 3-h.p. electric motor and hydraulic unit mounted on the cross traverse carriage. To raise the carriage the driver depresses a pedal adjacent to the main control column.

In the interests of safety, the long travel and cross traversing controls are so interlocked that either can be operated only when it is safe for that particular motion to be made. A further safety measure brings the traverser automatically to rest at the end of the track.

Each loaded "flat," having arrived at its appropriate cart bay (which operation might have involved the transference of

into contact with the upper surface of a moving creeper chain conveyor located at the side of the 3-ft. track. By pushing the lever in the opposite direction a brake is applied. By the time the "flat" has passed the last of the 12 delivery vehicles in the cart bay it will be empty and available for picking-up by the "flat" traverser for return for reloading at the sorting berths at the end of the conveyors.

The creeper chain conveyors consist of a number of shoes carried by a steel chain travelling at 100 ft. per min., the overall length of each conveyor being approximately 278 ft. The conveyors are driven by 5-h.p. electric motors through fluid

(Continued on page 22)

Mechanised Goods Shed Operation, L.M.S.R.



Horse with portable shafts coupled to internal dray



Tractor coupled to internal dray



Received section, looking east. Note consignments on conveyor which are sorted according to label and placed either on internal drays (right) for further rail transit, or (left) on the flats for local delivery



Received section, looking west, showing flats and flat traverser. The plan and section on page 16 should be read in conjunction with this view

The made
Sir Vice-P
Scottis Railwa Deputy Coke from th an ade of the Corp has b Air S until he ha with in the fuel, a to M Petrole the de Vice-P was rea which during C. E. K

The Railwa the R has rela pressure Henry Deput retains

SOUTH The that E return resume of the Mr. S. has b retary

The Ltd. a has Direct

We on De Baron Repre roads receivin Lejeun Augus Lieut was tr and Lejeun des W Assist later and re Sleepin with th in 192 made States the Le

RAILWAY NEWS SECTION

PERSONAL

The following announcement has been made by the Ministry of Civil Aviation :—

Sir Harold Hartley, having resigned the Vice-Presidency of the London Midland & Scottish Railway, the Chairmanship of Railway Air Services Limited, and the Deputy-Governorship of the Gas Light & Coke Company, has accepted an invitation from the Minister of Civil Aviation to become an additional member of the board of the British Overseas Airways Corporation. Sir Harold Hartley has been Chairman of Railway Air Services Limited from 1934 until the present time. Since 1938 he has been closely associated with Government departments in the production of aviation fuel, and he was scientific adviser to Mr. Geoffrey Lloyd at the Petroleum Warfare Department in the development of F.I.D.O. As Vice-President of the L.M.S.R. he was responsible for the administration of the L.M.S.R. workshops which made a notable contribution during the war to aircraft construction and repair under the late Mr. C. E. Fairburn.

SOUTHERN RAILWAY DEPUTY-CHAIRMAN

The directors of the Southern Railway Company announce that the Rt. Hon. the Earl of Radnor has relinquished his appointment as Deputy-Chairman on account of pressure of business, and that Mr. Henry Brooke has been elected Deputy-Chairman. Lord Radnor retains his seat on the board.

SOUTHERN RAILWAY SECRETARSHIP

The Southern Railway announces that Brigadier L. F. S. Dawes has returned from national service and resumed his position as Secretary of the company as from January 1. Mr. S. E. Clark, the Acting Secretary, has been appointed Deputy Secretary of the company.

The British Electric Traction Co. Ltd. announces that Mr. J. S. Wills has been appointed Managing Director.

We regret to record the death in New York on December 12, 1945, at the age of 63, of Baron Hubert Lejeune, M.C., General Representative of the French National Railroads in the U.S.A. and Canada. After receiving his education in France, Baron Lejeune went to the United States. In August, 1914, he was commissioned as a Lieutenant in the Royal Marines, and later was transferred to the R.F.C. and R.A.F. and was made a Captain. In 1924 Baron Lejeune joined the Compagnie Internationale des Wagons-Lits, and shortly was promoted Assistant Manager to its London Office. He later went to the United States to supervise and reorganise the offices of the International Sleeping Car Company in close co-operation with the French and Belgian railways. When, in 1932, French National Railroads decided to open its own office in the U.S.A., he was made General Representative for the United States and Canada. He was a Chevalier of the Legion of Honour.

Sir Harold Hartley, K.C.V.O., C.B.E., M.C., F.R.S., who has resigned the Vice-Presidency of the London Midland & Scottish Railway, and the Chairmanship of Railway Air Services Limited, and has accepted an invitation from the Minister of Civil Aviation to become an additional member of the board of the British Overseas Airways Corporation, was born in 1878. He was educated at Dulwich College, and at Oxford University, where he took a first class

International Executive Council of the Conference. Sir Harold Hartley is Chairman of the Fuel Research Board of the Department of Scientific & Industrial Research, which position he has held since 1932. He is a Director of The Times Publishing Co. Ltd., and was a Deputy-Governor of the Gas Light & Coke Company until his recently-announced resignation from that office. He is a member of the board of governors of the College of Aeronautics. In 1943 he was appointed a member of the committee constituted by the Chancellor of the Exchequer to examine the training of Civil Servants. Since 1938 he has been closely associated with Government departments in the production of aviation fuel, and he was scientific adviser to Mr. Geoffrey Lloyd at the Petroleum Warfare Department in the development of F.I.D.O. (fog dispersal for safe landing of aircraft). As Vice-President of the L.M.S.R. he was responsible for the administration of the L.M.S.R. workshops which made a notable contribution during the war to aircraft construction and repair under the late Mr. C. E. Fairburn, Chief Mechanical & Electrical Engineer, L.M.S.R., who died last October. Sir Harold Hartley was knighted in 1928 and was made a K.C.V.O. in the New Year Honours, 1944.

Lord Portal (Chairman of the Great Western Railway Company) has been elected a Vice-President of St. Mary's Hospital, Paddington.

Mr. J. M. Hobday has been appointed Assistant Secretary of the Buenos Ayres Great Southern Railway Co. Ltd. and Buenos Ayres Western Railway Limited.

Sir Holberry Mensforth has resigned his seat on the board of John Brown & Co. Ltd., and his office of Chairman and his seat on the board of Cravens Railway Carriage & Wagon Co. Ltd.

GREAT NORTHERN RAILWAY (IRELAND)

Mr. T. J. Carton, Acting Operating Assistant to the Traffic Manager, has been appointed District Superintendent, Dublin, in succession to Mr. P. A. Foley, who has retired.

Mr. Herbert H. Phillips, A.C.I.S., M.Inst.T., Divisional Superintendent, Cardiff, Great Western Railway, who, as recorded in our December 28, 1945, issue, has been appointed Assistant to the Superintendent of the Line resident in South Wales, has been in G.W.R. service since 1908. Until 1932 he was a member of the General Manager's personal staff, in which capacity he gained a wide experience in all phases of railway administration, and for some years had charge of the section dealing with freight rates and charges, passenger fares, docks and steamboats, rolling stock and general subjects. He also acted as Secretary of the Cork City Railways before the acquisition of that



Sir Harold Hartley

Vice-President, L.M.S.R., 1930-45; Chairman, Railway Air Services Limited, 1934-45; appointed to the board of British Overseas Airways Corporation

in Natural Science, and in 1901 became a Fellow and Tutor of Balliol College, and subsequently Bedford Lecturer on Physical Chemistry. He was a Captain in the 7th Leicestershire Regiment, 1914-15; Chemical Adviser to the 3rd Army, 1915-17; Assistant Director, Gas Services, G.H.Q., France, 1917-18; and Controller of Chemical Warfare, Ministry of Munitions, 1918-19. He was awarded the M.C., was mentioned in despatches three times, and eventually was promoted to be Brigadier-General. In 1919 he was made a C.B.E., and he was head of the mission which reported on German chemical factories in that year. In 1930, Sir Harold Hartley was appointed Vice-President (Works & Ancillary Undertakings), and Director of Scientific Research, of the L.M.S.R. He became Chairman of Railway Air Services Limited in 1934. In 1935 he was elected Chairman of the British National Committee of the World Power Conference, and, later in that year, Chairman of the

**Mr. H. H. Phillips**

Appointed Resident Assistant to Superintendent of the Line in South Wales (Cardiff), G.W.R.

company by the Great Southern Railways of Ireland. In 1932 Mr. Phillips was transferred to the Office of the Superintendent of the Line to reorganise the company's excursion and cheap-ticket facilities, and he was largely responsible for the introduction of monthly return tickets. At the end of 1937 he was transferred to Cardiff as Assistant Divisional Superintendent, and in 1941 was promoted to the position which he now vacates.

Mr. R. A. Ryan, Operating Assistant to Chief Goods Manager, Paddington, Great Western Railway, who, as recorded in our December 28, 1945, issue, has been appointed Resident Assistant to the Chief Goods Manager in South Wales (located at Cardiff), entered the company's service at Paddington Goods Station in 1913. During the next nine years (with the exception of the two years 1917-19, when he was on active service) he gained general experience in various sections. In 1922 he

**Mr. R. A. Ryan**

Appointed Resident Assistant to Chief Goods Manager in South Wales (Cardiff), G.W.R.

was transferred to the Rates Department of the Chief Goods Manager's Office, and was engaged for the ensuing six years on various phases of rates revision work arising under the Railways Act, 1921. After a period as Personal Clerk to the Rates Assistant, Mr. Ryan was transferred, in 1933, to the Development Department, where for three years he was Secretary to the Commercial Assistant to the Chief Goods Manager; he became Principal Clerk of the department in 1938. During the whole of that period and up to the outbreak of the recent war, the Development Department was engaged largely on the development of sites for works, particularly in South Wales, where the G.W.R. was instrumental in arranging the establishment of many new industries. The department was responsible also for the progressive development of containers, railhead distribution, household removals, and other facilities; for co-ordination arrangements with associated cartage com-

**Dr. L. Douglas**

Appointed Advisory Engineer, London, South African Railways & Harbours

panies; and for the organisation and direction of new methods of railway salesmanship. Mr. Ryan represented the company on numerous R.C.H. and other committees. In August, 1942, he was appointed Head of the Working Department, Chief Goods Manager's Office, which department is responsible for terminal working arrangements and regulation of traffic, freight rolling stock, exceptional loads, demurrage, and many other subjects. Since 1943 Mr. Ryan has occupied the position of Operating Assistant to the Chief Goods Manager, during a period when the most exacting demands were made on the railways in connection with military and other war traffics. He has been the G.W.R. representative on the Freight Rolling Stock and Iron Ore Committees for the past three years.

Dr. L. Douglas, D.Sc., M.I.Mech.E., who, as recorded in our November 30, 1945, issue, has been appointed Advisory

**Mr. H. E. Robarts**

Divisional Engineer, Eastern Division, Southern Railway, 1933-45

**Mr. E. G. Horton**

Appointed District Engineer, Watford, L.M.S.R.

**Mr. W. S. Thompson**

Director of Public Relations, C.N.R., who recently visited Great Britain

Eng
Railw
of th
Afric
the V
he C
mech
1924,
engin
with
hours
engin
Uter
Assis
fonte
capac
shop
sible
the p
mote
Engi
year
the b
quar
break
Engi
durin
as A
Port
1943
Was
whil
the S
Supp
appe

M
has
Engi
way,
Man
Dep
in 1
servi
of T
ence
with
joine
S.E.
Dist
W.
ferre
in 1
the
and
of t
On
he
Ash
has
Eng

M
Dis
wh
issu
nee
Sch
han
Un
Mid
Wor
was
Div
in
Arr
rail
Wa
No
tem
Sec
nece
and
In
tan

January 4, 1946

THE RAILWAY GAZETTE

21

Engineer, London, to the South African Railways & Harbours, and to the Office of the High Commissioner for South Africa, is a graduate of the University of the Witwatersrand, Johannesburg, where he obtained the degree of B.Sc. in mechanical and electrical engineering in 1924, and in 1936 received the D.Sc. in engineering. He commenced his career with the South African Railways & Harbours Administration in 1925 as a pupil engineer in the mechanical workshops at Uitenhage. In 1928 he was appointed Assistant Engineer (Mechanical) at Bloemfontein, and, in addition to serving in this capacity at Pretoria and Usakos Workshops until 1936, was for a time responsible for the testing of locomotives during the period 1929-30. In 1936 he was promoted to be Assistant to the Mechanical Engineer at Bloemfontein, and in the next year to be Locomotive Superintendent for the Eastern Transvaal System, with headquarters at Pretoria. Just before the outbreak of war he was appointed Mechanical Engineer at Uitenhage Workshops, and during that period up to 1943 also served as Assistant Director of Ship Repairs for Port Elizabeth Harbour. At the end of 1943 Dr. Douglas was transferred to Washington as Advisory Engineer, and while there also served as a Director in the Union of South Africa Government Supply Mission to the U.S.A. until his appointment to London.

Mr. H. E. Robarts, A.M.Inst.C.E., who has retired from the position of Divisional Engineer, Eastern Division, Southern Railway, entered the service of the S.E.C.R. Managing Committee in the Engineer's Department under the late Sir Percy Tempest in 1899. In 1902 he left the committee's service to go to Head, Wrightson & Co. Ltd., of Thornaby-on-Tees, to gain further experience in steelwork construction. After being with that company for two years, he again joined the Engineer's Department of the S.E.C.R., and was appointed Assistant to the District Engineer at Swanley, the late Mr. W. B. S. Mills. Mr. Robarts was transferred to the New Cross District in 1911, and in 1913 he was appointed District Engineer at New Cross. He held that position until the formation of the Southern Railway, and then was appointed Divisional Engineer of the Southern Division at East Croydon. On the re-arrangement of divisions in 1933 he transferred to the Eastern Division at Ashford as Divisional Engineer. Mr. Robarts has held the position of District or Divisional Engineer for 32 years.

Mr. E. G. Horton, B.Sc., M.Inst.C.E., District Engineer, Northampton, L.M.S.R., who, as recorded in our December 14 issue, has been appointed District Engineer, Watford, was educated at St. Albans School and University College, Nottingham, and took his B.Sc. degree at London University. He entered the service of the Midland Railway as a pupil to Mr. W. B. Worthington, Chief Engineer, in 1911, and was appointed an Assistant to the Western Divisional Engineer in 1914. After service in France he was invalided out of the Army in 1916, and on returning to the railway was engaged on developments at Washwood Heath, Birmingham, Kings Norton and Redditch. In 1924 he was temporarily transferred to the New Works Section for Parliamentary work in connection with the Mid-Notts Joint Line, and again in 1928 for constructional work. In the next year he was appointed Assistant District Engineer at Northampton,

and he became District Engineer in 1933. During the past twelve years some of the larger schemes carried out in the Northampton District have been the construction of sidings to deal with the developments of Stewarts and Lloyds Limited at Corby, the extension of the up and down sidings at Northampton, the addition of all-welded steel floors to the two viaducts carrying the railway over the River Ouse at Sharnbrook, and the reconstruction in reinforced concrete of two bridges over the River Nene at Northampton.

Mr. Walter Scott Thompson, Director of Public Relations, Canadian National Railways, Steamships, Hotels, Telegraphs and Express, and of Trans-Canada Air Lines, who, as recorded in our December 21, 1945, issue, recently paid a short visit to Great Britain, was born on October 22, 1885, the son of a Scottish newspaper editor, and was educated at Rutherford College, Northumberland. He entered newspaper work in Fleet Street, London, and after Australasian newspaper experience, went to Canada in 1911 and was City Editor of the Montreal evening newspaper, *The Witness*. Later he was News Editor of the *Montreal Herald*, which position he held until his appointment, in 1914, to head of the Press Department of the Grand Trunk and Grand Trunk Pacific Railways. In 1922 he was appointed Director of Publicity of the Canadian National Railways and associated enterprises by Sir Henry Thornton, and he became Director of Publicity of Trans-Canada Air Lines in 1937. In 1941 he was made Director of Public Relations of those organisations, retaining his direction also of their advertising and publicity services. Mr. Thompson's duties have involved travelling some 50,000 miles a year in maintaining personal contacts and in connection with the branches of his department in New York, Chicago, London (England), Toronto, Winnipeg, Moncton and Vancouver. He has handled press relations for many distinguished visitors to Canada and the U.S.A., including the Prince of Wales, and in 1939 accompanied King George VI and Queen Elizabeth on their tour through Canada and the U.S.A. When the Dominion of Canada celebrated its Diamond Jubilee in 1927, Mr. Thompson was Chairman of the National Publicity Committee. At the outbreak of war in September, 1939, he was appointed Director of Censorship, and he was called on in 1940 to organise the Department of Public Information at Ottawa. When he relinquished the post of Director of Public Information to return to the railway and air line, he left senior members from his Montreal office to carry on the work until the end of 1943.

We regret to record the death on November 21, 1945, of Mr. E. H. Jones, Chairman of E. H. Jones (Machine Tools) Limited.

The late Mr. William Royce Lysaght, for many years one of the leading figures of the steel industry, who was President (and had been Chairman & Managing Director) of John Lysaght Limited and a Director of Guest, Keen & Nettlefolds Limited, left £277,367.

Mr. J. G. Bridges, Director-General of the Travel Association, has announced the appointments of Mr. C. Allan Ellery to be Manager, and Squadron-Leader H. S. Hydes to be Secretary. Mr. Ellery, who has served with the Travel Association since its inception in 1929, henceforward will deal with general promotion matters concerning developments to take place.

The appointment is announced of Mr. John C. Patteson, hitherto European Manager, as European General Manager of the Canadian Pacific Railway.

We regret to record the death, late on December 24, of Mr. Robert Gardiner, Superintendent (Scottish Area), L.N.E.R. Mr. Gardiner had carried through his normal duties earlier in the day.

The Minister of War Transport has appointed the following to be Under-Secretaries : Messrs. R. H. Tolerton, C. A. Birtchnell, S. A. Bailey, S. J. Page, N. A. Guttry, W. G. Weston, and R. H. Wilson. Mr. G. F. Stedman has been appointed Acting Under-Secretary.

We regret to record the death in Toronto on December 22, at the age of 76, of Mr. Robert Phipps Ormsby, who was Secretary of Canadian National Railways and allied companies, 1923-35.

SOUTHERN RAILWAY APPOINTMENTS

Mr. F. I. S. Gill, Divisional Engineer, Central Division, to be Divisional Engineer, Eastern Division, vice Mr. H. E. Robarts, retired.

Mr. S. L. Furnivall, Assistant Divisional Engineer, London West Division, to be Divisional Engineer, Central Division.

L.M.S.R. STAFF CHANGES

Mr. A. P. J. Ball has been appointed as Estate Manager & Rating Agent, in place of Mr. W. H. Roberts, Estate Manager, and Mr. F. Smith, Rating Agent, who have retired.

Mr. T. M. Herbert, Manager, Research Department, Watford H.Q., to be Manager, Scientific Research Department, Watford H.Q.

Mr. M. G. Bennett, Lighting & Heating Assistant, Chief Engineer's Department, Watford H.Q., to be Manager, General Research Department, Watford H.Q.

L.P.T.B. APPOINTMENTS

Mr. F. A. A. Menzler, B.Sc., F.I.A., to be Chief Development & Research Officer. Mr. Menzler, who has been the Board's Chief Financial Officer, will be in charge of the newly-created Development & Research Department.

Mr. D. McKenna, M.B.E., who has recently returned from war service, to be Mr. Menzler's principal assistant, with the title of Development & Research Officer. Mr. McKenna also has been appointed Secretary to the Standing Joint Committee of the Board and the four main-line railway companies established under the London Passenger Transport Act, 1933.

THE PULLMAN CAR COMPANY

Mr. G. H. Griffith, who has retired from the General Management of the Pullman Car Co. Ltd., was entertained at a cocktail party held at the Charing Cross Hotel on December 31. Mr. F. D. M. Harding, his successor, in a brief speech wished Mr. Griffith good luck on his retirement. Mr. A. C. W. Britton, Chief Storekeeper, who seconded, referred to the ups and downs of the Pullman Car Company during the seventeen years in which Mr. Griffith had been General Manager, and his interest in staff welfare, and the formation of a superannuation fund.

Mr. Griffith, in replying, said he hoped that the Pullman Car Company was entering on a new era of prosperity.

The New Year Honours List

Among the honours announced in the New Year list are the following of transport and industrial interest:—

Viscount

The Rt. Hon. Julius Salter, Baron Southwood, Chairman, Odhams Press Limited; Chairman, Red Cross Penny-a-Week Committee of H.R.H. the Duke of Gloucester's Fund. For political and public services.

Knights Bachelor

Mr. Wallace Alan Akers, C.B.E., Director of Atomic Bomb Research, Department of Scientific & Industrial Research. Director, Imperial Chemical Industries Limited.

Mr. Donald Coleman Bailey, O.B.E., A.M.Inst.C.E., Acting Superintendent, Experimental Bridging Establishment, Ministry of Supply.

Mr. George Perrin Christopher, Director, Commercial Services, Ministry of War Transport.

Mr. George Eustace Cuffe, General Manager, Bombay, Baroda & Central India Railway, and lately Director-General of Railways (Calcutta Area).

Mr. Norman Victor Kipping, J.P., lately Head of the Regional Division, Ministry of Production. Recently appointed Director-General of the Federation of British Industries.

Mr. William Lennox McNair, K.C., Legal Adviser to the Ministry of War Transport.

Commander Edward Robert Mickle, C.B.E., R.N. (retired), Deputy-Chairman, Vickers-Armstrongs Limited.

Mr. Frank Ewart Smith, M.I.Mech.E., Chief Engineer & Superintendent, Armament Design Department, Ministry of Supply. Director, Imperial Chemical Industries Limited.

Mr. William George Verdon Smith, C.B.E., Chairman, Bristol Aeroplane Co. Ltd.

Mr. Thomas George Spencer, M.I.E.E., Managing Director, Standard Telephones & Cables Limited.

Mr. Alexander Murray Stephen, M.C., Chairman, Alexander Stephen & Sons Ltd., Shipbuilders & Engineers, Glasgow. Director, London Midland & Scottish Railway Company.

Mr. Theodore Eastaway Thomas, C.B.E., lately General Manager, London Passenger Transport Board.

Mr. Charles Geoffrey Vickers, V.C., Director-General, Economic Intelligence Division, Foreign Office. Member, London Passenger Transport Board.

C.M.G.

Mr. William Melville Codrington, M.C., until recently Acting Assistant Under-Secretary of State in the Foreign Office. Chairman, Great Western of Brazil Railway Co. Ltd., Director, Great Western Railway Company, and other companies.

Mr. Albert James Hannan, K.C., Crown Solicitor & Solicitor for Railways, State of South Australia.

C.S.I.

Mr. Alfred Charles Turner, C.I.E., M.B.E., I.C.S., Financial Commissioner, Railways, India.

K.C.I.E.

Mr. Eric Conran-Smith, C.S.I., C.I.E., I.C.S., Secretary to the Government of India in the War Transport Department.

C.I.E.

Mr. William Alexander Anderson, General Manager, North Western Railway, India.

Mr. Alexander Robert Edington, Direc-

tor of Railway Stores, Railway Board, New Delhi.

Lt.-Colonel Ralf Billing Emerson, O.B.E., R.E., General Manager, Great Indian Peninsula Railway.

Mr. Alan Andrew Phillips, Chief Controller of Railway Priorities, War Transport Department, Government of India.

Mr. Indra Singh Puri, Indian Audit & Accounts Service, Director of Finance, Railway Board, New Delhi.

M.V.O. (Fourth Class)

Mr. Herbert Edward Ogle Wheeler, O.B.E., lately Deputy Traffic Manager, Southern Railway.

M.V.O. (Fifth Class)

Mr. James Gordon Singer, M.B.E., lately Traffic Superintendent, Aberdeen, L.N.E.R.

G.C.B. (Civil Division)

Sir Cyril William Hurcomb, K.C.B., K.B.E., Director-General, Ministry of War Transport.

C.B. (Civil Division)

Mr. Sidney Alfred Bailey, M.B.E., Under-Secretary, Ministry of War Transport.

Rear-Admiral George Pirie Thomson, C.B.E., R.N. (retired), lately Chief Press Censor, Ministry of Information. Recently appointed to undertake Press liaison duties with Cable & Wireless Limited.

C.B. (Military Division)

Major-General (temporary) George Neville Russell, C.B.E., late R.E.

G.B.E. (Civil Division)

Sir Harold Gibson Howitt, D.S.O., M.C., F.C.A., J.P., D.L., Member of Air Council since 1939.

K.B.E. (Military Division)

Major-General Donald Jay McMullen, C.B., C.B.E., D.S.O., M.I.Mech.E., late R.E.

C.B.E. (Civil Division)

Major Hewitt Pearson Montague Beames, M.Inst.C.E., M.I.Mech.E., Chairman of the Emergency Committee, County of Cheshire. Deputy Chief Mechanical Engineer, London Midland & Scottish Railway, 1931-34.

Mr. Rupert Cecil Bucquet, General Manager, Nyasaland Railways, and Controller of Shipping & Railways, Nyasaland.

Mr. Harold Robert Leslie Fox, General Manager, Jamaica Government Railway.

Mr. William Kelly Wallace, Chief Civil Engineer, London Midland & Scottish Railway.

Mechanised Goods Shed Operation, L.M.S.R.

(Concluded from page 17)

couplings and worm reduction gears situated in pits in common with the deck conveyor driving units. To facilitate changing a traverser for servicing, a 20-ton hand-operated Goliath crane is provided in the annexe at the west end of the traverser runways.

The 30-cwt. capacity overhead travelling crane has a 12-h.p. hoist motor giving a speed of 88 ft. per min. on a single rope. The cross traverse motion is operated by a 1½-h.p. motor at a speed of 100 ft. per min.; the span is 81 ft. 2 in. The long travel motion has a speed of 350 ft. per min. given by a 17½-h.p. motor; the total length of the crane runway is 625 ft.

To facilitate the setting of individual wagons in the shed, and thus dispensing with shunting engines, a 20-ton capacity self-propelled wagon traverser, with captain, is provided on a 343-ft. long track laid outside the entire length of the east end of the shed, and illustrated on page 17. The traverser travels at a speed of 350 ft.

per min. and is worked by a 30-h.p. electric motor from overhead collector wires.

The electric power supply for the whole depot is obtained from the Birmingham Corporation at 11,000 volts, 3-phase, 50 cycles. This is transformed at a sub-station on the premises to 400 volts, 3-phase, 50 cycles, for power and 230 volts for lighting. Alternative high-tension supplies are given and there are two transformers, each of 200 Kva capacity, either of which is capable of supplying the full demands of the depot.

Staff & Labour**Dockers' Wages**

The report of the committee of investigation which was appointed by the Minister of Labour & National Service, under the Chairmanship of Mr. Justice Everard, to consider the outstanding difference in respect of the national minimum wage and the piece-workers' minimum guarantee in the port transport industry and make a recommendation thereon, was made known on December 10. The report recommends:—

(a) That the national minimum wage be increased from 16s. a day to 19s. a day, operated on a half-daily basis as heretofore.

(b) That the piece-workers' minimum guarantee be increased from 16s. a day to 19s. a day, operated on a half-daily basis as heretofore.

(c) That the said increases be treated as having come into operation on the first full pay-day after November 28, 1945.

The committee states that "though the labour schemes administered by the Ministry of War Transport and the national Dock Labour Corporation have substantially altered the old 'casual' characteristics of employment at the docks, it nevertheless remains and must (as we understand it) remain true under existing conditions that the labour forces required to be available at the docks must be such that the men cannot expect full employment for the whole of every working day in the week. We refer also to the fact that in this industry the so-called 'national minimum wage' is not merely a minimum wage as commonly so understood, but forms the basis of the entire wage structure of the industry, and consequently to the effect of any increase in the time or basic rates on the piece-rates. We refer finally to the bearing of dock wages on the wages of other workers (although under different conditions) at the docks and in other industries."

Continuing, the report states that it would be neither right nor possible to disregard the "attendance" monies which, under and subject to the conditions of the existing schemes operated by the Ministry of War Transport and the National Dock Labour Corporation, are payable to dockers presenting themselves for work for any turn on which no work is available for them. The committee emphasises that the conclusions it has reached assume and are conditional on the continuance of the existing schemes, including registration and including particularly the existing rights to "attendance" payments.

As to the increase in the minimum to 19s. a day, the committee says on this basis a dock worker who obtains employment and is paid on the time basis for the full 5½ days of the week would receive 104s. 6d. If he obtains employment and is paid on the time basis for 4 days, and is entitled to "attendance" money for the remaining three turns, his wages would amount to 94s. or 98s. 6d. (according to the scheme applicable). The committee states: "These figures represent in our opinion fair rates of wages in all existing circumstances and the increases involved, compared with pre-war figures, are in our judgment fairly in line with increases which have been applied in other industries."

Leopoldina Railway Co. Ltd.

The ordinary general meeting of the Leopoldina Railway Co. Ltd. was held on December 20 at Winchester House, Old Broad Street, London, E.C. Mr. C. H. Pearson (Chairman of the company) presided.

The Secretary (Mr. H. A. A. Hicks) having read the notice convening the meeting and the report of the auditors,

The Chairman said : This is the last occasion on which we shall have the pleasure of Mr. Cruickshank's company on our side of the table at these meetings. Mr. Cruickshank has intimated his desire to retire from a position which he has occupied for 25 years, during which time he has assisted loyally and well in all duties appertaining to his office. To fill the vacancy, I and my colleagues recommend the appointment of Mr. T. E. Baring ; Mr. Baring joined our counsels for the first time in September last and he has already made evident to us the wisdom of our choice.

When I addressed you a year ago I was able to tell you that despite a heavy rise in expenditure on salaries and wages and further increases in the cost of fuel and materials, the year 1944, with the benefit of a full year's application of the higher tariffs effective in October, 1943 was, so far as could then be ascertained, likely to show an improvement in net receipts. This, as you will have noticed from the accounts before you, has proved to be the case : the net result being nearly £100,000 better—£262,656, against £163,467.

Receipts in general reflected a full year's working at the higher rates which became effective in October, 1943, but, apart from this, there was a small, but satisfactory, increase in the volume of traffic, most marked in the case of passengers. This latter was largely the result of an increase of almost 3½ millions in the number of passengers travelling on the Rio suburban trains. I should add that, with the present saturation of suburban track capacity, and of the locomotive and coaching stock operating thereon, the problem of handling this traffic safely and expeditiously, quite apart from coping with any further expansion, is pre-occupying not only ourselves, but the local authorities.

After making allowance for the increased carriage of sugar cane, and a small decline in coffee carryings, there was a net decrease of 5,000 tons in goods tonnage transported during 1944 compounded of variations in a number of items. In making comparisons it has to be borne in mind that lack of available rolling stock again precluded the railway from carrying all traffic offering, so that tonnages railed do not necessarily express traffic potentialities and furthermore attention to "priorities," indicated by the authorities, obliged concentration on particular items.

Expenses in total were no less than £480,000 in excess of those of the previous year and followed increases of £296,000 in 1943, and £237,000 in 1942. The overriding factor contributing to this was the rise in staff expenditure. I referred last year to the promulgation of certain decree laws in Brazil raising, as from December 1, 1943, official minimum wage rates and making obligatory parallel increases in other categories of pay—I stressed the point that the full effect of these increases had to be faced in 1944, and that the average monthly increase to the end of June had been in the neighbourhood of £20,000. In the event, expenditure on wages, including pension fund and other statutory contributions assessed thereon, rose by some £220,000 in the full year. That even a figure of this magnitude did not afford sufficient compensation against the continu-

ing rise in the cost of living in Brazil has been demonstrated by subsequent events.

Expenditure on fuel was again higher, though the percentage of increase—14 per cent.—was lower than in previous years. Consumption, assessed on a "calorific" basis, having regard to the different types of fuel in use, increased by 8 per cent. While increased expenditure on fuel did not bulk so largely in 1944 as in previous years in the inflation of working costs, it is still a main item accounting for the high level of these expenses compared with pre-war standards—in 1939, for instance, the total fuel bill amounted to £201,537 ; in 1944 the equivalent figure was £609,709, that is over three times as much. In 1939 a ton of coal could be bought in this country and shipped to Brazil for little over £1 15s. per ton ; to-day, the cost would work out at something like £5 15s. per ton.

SHORTAGE OF ROLLING STOCK

The shortage of carrying facilities is a consequence of the widespread dislocation caused by the war, and in our own case a reflection of the lack of spare parts urgently required to keep locomotives and vehicles in service ; of the enforced use of substitute materials and methods, decidedly uneconomic ; of the unavoidable diversion of wagons to the collection and distribution of wood-fuel in the absence of imported coal ; and last, but not least, of the wearing out and obligatory removal from service of rolling stock equipment in general. There is, too, a general shortage of skilled staff which has its repercussion in many directions and must have an effect in lowering standards of operational efficiency.

The year 1945 is just closing and it is right that our eyes should be looking forward

into 1946. At the present time we are unable to carry promptly all the traffic offered to us and our revenue is to that extent not a true representation of local transportation demands. Relief should, however, gradually be forthcoming to enable us to overcome the difficulties in the way of our meeting these demands. Expenses, of necessity, continue higher than they otherwise would be by reason of the uneconomic maintenance of our limited equipment and a patchwork policy which has been unavoidable. Here, too, betterment should reasonably be expected. So it is that when conditions improve we can, I think, not unreasonably hope to see an increase in gross revenue with the expense columns reflecting the effect of improved equipment, and also I sincerely hope the alleviation to be found in the greater availability, and, perhaps, lower cost, of essential supplies. With this reversion to more normal conditions, we cannot overlook a recrudescence of road competition. You can be sure, however, that this is well in the minds of your executives.

It would ill become me were I not to take this opportunity of mentioning the appreciation we owe to the Brazilian authorities for the assistance and understanding that they have shown in the difficult times through which the railway has passed and is still passing.

I cannot conclude without paying tribute to those, both in London and Rio, who offered their services to the Allied Forces during the war. We must not fail either to recognise the services of those abroad, of all ranks who, so ably led by our general manager, Mr. G. B. F. Neale, have rendered doughty service in times of severe anxiety and distress. Nor can we forget the work of our Secretary, Mr. Hicks, and our officers and staff on this side.

The report and accounts were unanimously adopted.

The British Railways Stockholders Union Limited

The thirteenth annual meeting of the British Railways Stockholders Union Limited was held at the Caxton Hall, Westminster, on December 21. Sir Charles Stuart-Williams, Chairman of the Union, who presided, said that after six annual general meetings held during the war, it was no small satisfaction to reassemble at the first annual meeting after the advent of peace. But present dangers and difficulties, if of a different kind, were no less formidable in their scope and number than those of the war years. The report of the Union indicated the momentous change in the position of British railways as a result of the advent of a Socialist Government pledged to undertake the revolutionary task of nationalising many of our most important industries and undertakings including those of transport. The justification for this programme had never been clearly stated; to many, it seemed that nationalisation was justified only when the probability of public benefit by increased economy and efficiency was clearly indicated. But however the proposals of the Government might strike stockholders they had to be faced, and the Union's policy had to be framed accordingly. It had the precedent of the terms proposed for the nationalisation of the Bank of England, the announcement—but without any detailed statement of the basis of compensation—of similar intentions for telecommunications and civil aviation, and the statement made at the Trade Union Congress that compensation should be based on "net maintainable revenue."

The case of the railways differed in two important respects; first, its close connections with other competing forms of transport; secondly, the recognised disabilities under which railways had had to operate in meeting that competition, and which, just before the war, had been the subject of prolonged negotiations. In other words, the "net maintainable revenue" of British railways could in no wise be deduced reliably from the actual figures of the pre-war years. This was well known and it had been confirmed and emphasised by the indispensable work of the railways during the war.

The committee held strongly that the standard revenue embodied in the Railways Act of 1921, offered the only statutory basis for assessing railway revenue. Given a proper range of fares and freight charges and the continuance of improved working conditions such as had been tried and tested during the years of war, there was no reason why the equivalent should not be earned in the post-war period. The Act of 1921 laid it down, not only that standard revenue could be earned, but that the Railway Rates Tribunal should help the four main-line companies to earn the necessary revenue. What fairer basis, therefore, was there for compensating railway shareholders than that laid down by Parliament less than 25 years ago. Current traffic showed that such a settlement would represent a good bargain for the Government.

Mr. Frederick Smith, M.Inst.T. (a member of the Executive Committee and of the Council of the Union), said there seemed

to be a general assumption that the question of nationalisation should be approached by analogy. That was a wrong approach, because the railways had a definite legal basis established by the Railways Act of 1921 on which they could expect to be treated when the question of compensation came to be settled. That basis was the standard revenue as to the financial terms and as to the results which it was expected the railways would achieve, which indeed they were to be encouraged to achieve almost to the extent of a guarantee, namely, that they would earn the standard revenue.

Refreshment Facilities, Southern Railway

From Monday, January 7, an extensive restoration is taking place on the Southern Railway of restaurant and refreshment car services over all parts of the system amounting in all to about one-third of the peacetime facilities. A complete list of the trains so equipped is given in the annexed table. From the beginning of October last, the only restaurant cars reinstated on the Southern Railway were three in each direction daily between Waterloo and Exeter, with the Channel Islands and Newhaven boat trains; these are now supplemented by three in each direction between Waterloo and Bournemouth West, an additional Exeter service in each direction, and cars at hourly intervals on the Portsmouth electric express service to and from Waterloo. On the Central Section the facilities provided are buffet cars on the Mid-Sussex line to and from Bognor Regis and Littlehampton, and pantry cars (cars with small kitchens from which refreshments are served in the compartments) on the Brighton, Worthing, Eastbourne, and Seaford lines. On these last-mentioned routes, the refreshment cars for the most part run on the morning up and evening down business trains from Mondays to Fridays inclusive, but at intervals throughout the day on Saturdays, when a more ample service is run. On the Eastern Division refreshment cars will operate on the Kent Coast line to and from Margate and Ramsgate, and on the Tonbridge line to and from Sandwich, via Folkestone and Dover, and to and from Hastings via Tunbridge Wells. While the number of trains involved in these improvements is considerable, it should be remembered that, apart from the Western Section restaurant car trains, the journeys are short, and one car and its staff may provide for several different trains during the day.

Sunday restaurant car services comprise the 11 a.m. and 4 p.m. from Waterloo to Exeter, and the 12 noon and 4.55 p.m. up; the 11.30 a.m. to Bournemouth West and the 6.35 p.m. back; and the 9.45, 10.45 a.m., 12.45, 4.45, and 6.45 p.m., to Portsmouth Harbour, with the 10.20 a.m., 12.20, 2.20, 4.20, and 7.20 p.m. from Portsmouth to Waterloo. Buffet cars will be run on Sundays from Victoria at 7.55 and 9.55 p.m., 3.55 and 6.55 p.m. from Bognor Regis to Victoria and 9.18, 10.18 a.m., 3.18, 7.18, and 9.18 p.m. from Victoria to Bognor. Pantry cars on Sundays will be confined to the 11 a.m. and 8.30 p.m. from Victoria to Brighton, with the 5.25 p.m. up; the 11.25 a.m. to Littlehampton and the 6.9 p.m. up (via Hove); and the 6.45 p.m. from Victoria to Eastbourne. On Sundays refreshment cars will run at 3.35 p.m. from Victoria to Ramsgate, 9.40 a.m. from Ramsgate to Victoria, 3.15 p.m. from Charing Cross to Sandwich and 10.10 a.m. from Sandwich to Charing Cross. The Sunday services will begin to operate on January 13.

REINSTATE RESTAURANT AND REFRESHMENT CAR FACILITIES ON WEEKDAYS, SOUTHERN RAILWAY, FROM MONDAY, JANUARY 7, 1946

RESTAURANT CARS

	Down	Up
9.00 a.m.	Waterloo-Exeter Central	7.30 a.m.
10.50 ..	12.50 p.m.	4.30 ..
12.50 p.m.	6.00 ..	5.50 ..
6.00 ..	Waterloo-Bournemouth West	8.20 a.m.
8.30 a.m.	11.30 ..	2.30 p.m.
11.30 ..	6.30 p.m.	6.20 ..
6.30 p.m.	Waterloo-Portsmouth Harbour	8.15 a.m.
8.45 a.m.	9.45 ..	9.20 ..
9.45 ..	10.45 ..	10.20 ..
10.45 ..	11.45 ..	11.20 ..
11.45 ..	12.45 p.m.	12.20 p.m.
12.45 p.m.	1.15 p.m. S.O.	1.20 ..
1.15 p.m. S.O.	1.45 ..	2.20 ..
1.45 ..	2.45 ..	3.20 ..
2.45 ..	3.45 ..	4.20 .. S.X.
3.45 ..	4.45 ..	5.20 ..
4.45 ..	5.45 ..	6.20 .. S.X.
5.45 ..		7.20 ..

BUFFET CARS

	Victoria-Bognor Regis	
9.18 a.m.	7.05 a.m.	
10.18 ..	7.55 ..	
11.18 ..	8.55 ..	
12.18 p.m. S.O.	9.55 ..	
1.18 .. S.O.	10.55 ..	
2.18 .. S.O.	12.55 p.m. S.O.	
3.18 ..	1.55 ..	
4.18 .. S.X.	3.55 ..	
5.18 .. S.O.	4.55 ..	
5.30 .. S.X.	6.55 ..	
6.18 .. S.X.	7.20 ..	
7.18 ..		
9.18 ..		
	London Bridge-Bognor Regis	
5.15 p.m. S.X.	8.28 a.m.	
	Victoria-Littlehampton	
5.04 p.m. S.X.	8.59 a.m.	
	London Bridge-Littlehampton	
1.24 p.m. S.O.	6.39 a.m.	
5.06 .. S.X.		

PANTRY CARS

	Victoria-Brighton	
11.00 a.m.	7.11 a.m. S.X.	
12.00 noon S.O.	7.20 .. S.O.	
12.30 p.m. S.O.	7.40 .. S.X.	
1.00 .. S.O.	8.00 ..	
2.00 .. S.O.	8.35 .. S.O.	
3.00 .. S.O.	11.25 .. S.O.	
4.00 ..	12.25 .. S.O.	
5.00 .. S.O.	1.25 .. S.O.	
5.20 .. S.X.	2.25 .. S.O.	
6.00 .. S.O.	5.25 .. S.X.	
10.28 ..	7.25 .. S.O.	
	8.25 .. S.O.	
	London Bridge-Brighton	
5.00 p.m. S.X.	7.08 a.m. S.X.	
	8.20 a.m.	
	Victoria-Eastbourne	
9.45 a.m. S.X.	9.08 a.m. S.X.	
10.45 .. S.O.	9.36 .. S.O.	
11.45 .. S.O.	2.36 p.m. S.O.	
1.45 p.m. S.O.	3.36 ..	
6.45 .. S.X.		
	London Bridge-Eastbourne	
5.03 p.m. S.X.	7.27 a.m.	
	Victoria-Hove	
9.25 a.m. S.X.	8.07 a.m. S.X.	
7.25 p.m. S.X.	10.50 .. S.O.	
	Victoria-Littlehampton (via Hove)	
3.25 p.m. S.O.	7.37 a.m. S.X.	
5.35 .. S.X.		
6.30 .. S.X.		
	London Bridge-Littlehampton (via Hove)	
5.45 p.m. S.X.	8.00 a.m. S.O.	
6.05 .. S.X.		
	Victoria-Worthing Central	
10.25 a.m. S.O.	8.00 a.m. S.O.	
12.25 p.m. S.O.	12.35 p.m. S.O.	
2.25 .. S.O.	2.35 .. S.O.	
	London Bridge-Seaford	
5.03 p.m. S.X.	8.03 a.m.	
	Victoria-Seaford	
12.45 p.m. S.O.	8.38 a.m. S.O.	
3.45 .. S.O.		
4.45 .. S.X.		
	West Worthing-London Bridge	
	8.25 a.m. S.X.	

REFRESHMENT CARS

	Cannon Street-Margate-Ramsgate	
1.15 p.m. S.O.	6.29 a.m. S.X.	
4.45 .. S.X.	7.10 ..	
5.46 .. S.X.		
	Victoria-Margate-Ramsgate	
7.15 p.m. S.O.	12.26 p.m. S.O.	
	Charing Cross-Dover-Sandwich	
*11.15 a.m.	*1.14 p.m. S.O.	
6.15 p.m. S.O.	*1.20 .. S.X.	
7.15 ..	4.14 ..	
	Cannon Street-Dover-Sandwich	
5.00 p.m. S.X.	7.02 a.m.	
	Cannon Street-Hastings	
12.14 p.m. S.O.	8.10 a.m. S.X.	
5.06 .. S.X.		
	Charing Cross-Hastings	
12.25 p.m. S.X.	8.25 a.m. S.O.	
5.25 p.m. S.O.	2.10 p.m.	
*	To and from Folkestone Central only	

Parliamentary Notes

Manchester Ship Canal Bill

The House of Commons on December 10 agreed to the Lords' amendments to the Manchester Ship Canal Bill.

Minister of the Crown (Transfer of Functions) Bill

The Prime Minister (Mr. C. R. Attlee) on December 18 presented in the House of Commons the Ministers of the Crown (Transfer of Functions) Bill, and it was formally read the first time.

The objects of the Bill are to facilitate the redistribution of functions between Ministers of the Crown, and the alteration of the style and title of such Ministers; to make further provision with respect to the Minister of Food, the Minister of Labour & National Service, the Minister of War Transport, and the Secretary of the Department of Overseas Trade.

Questions in Parliament

G.W.R. Canteen Facilities

Mr. J. A. Sparks (Acton—Lab.) on December 20 asked the Minister of War Transport if he was aware that locomotive men in express passenger links No. 1 and 2 at Old Oak Common depot, G.W.R., when on away-from-home bookings were refusing to book off duty at Plymouth and Swansea where no canteen facilities existed, because their supplementary ration of tinned food was inferior and insufficient to sustain them; and would he take steps to remedy this matter as soon as possible and thereby avoid dislocation of train working arrangements.

Mr. Alfred Barnes stated in a written answer: Yes, Sir; I am aware that this has happened on a number of occasions. The Great Western Railway Company assures me, however, that it is providing the best packed meals it can from the foods obtainable under the points rationing scheme.

L.N.E.R. Traffic Restrictions

Sir William Darling (Edinburgh South—C.) on December 20 asked the Minister of War Transport if he was aware that the L.N.E.R. had been refusing traffic for stations south of Doncaster from Edinburgh for, in some cases, upwards of three weeks; and if he had any proposals to make for facilitating the endeavours of Scottish manufacturers to supply the Home Counties and the south with their merchandise.

Mr. Alfred Barnes in a written answer stated: I regret that owing to congestion caused by fog and heavy traffic it was necessary for the London & North Eastern Railway Company to impose restrictions on the acceptance of traffic for conveyance to destinations south of Doncaster. This restriction was removed on December 3.

Quality of Coal Supplies to Railways

Major E. A. Legge-Bourke (Isle of Ely—C.) on December 20 asked the Minister of War Transport what representations he had made to the Minister of Fuel & Power concerning the lateness of trains being attributable to poor-quality coal.

Mr. Alfred Barnes stated in a written answer: There is a shortage of the best large coal to meet all essential requirements but Major Legge-Bourke may rest assured that in the constant contact maintained between my department and the Ministry of Fuel & Power the requirements of the railways are taken fully into account.

Manchester-Sheffield Railway Centenary

Sir Ronald Mathews's speech at Sheffield commemorative luncheon

Sir Ronald W. Mathews, Chairman of the L.N.E.R., presided at a luncheon at the Royal Victoria Station Hotel, Sheffield, on December 21, which was held to commemorate the opening of the Sheffield, Ashton-under-Lyne & Manchester Railway 100 years ago.

The chief guest was the Minister of War Transport, Mr. Alfred Barnes. Others present included Sir Robert Burrows, Deputy Chairman, L.M.S.R.; Sir Charles Newton, Chief General Manager, L.N.E.R.; the Lord Mayor of Sheffield, Alderman C. W. Gascoigne; the Lord Mayor of Manchester, Alderman Hugh Lee; the Mayor of Hyde, Mr. Thomas Needham; the Mayor of Stalybridge, Mr. Harry Riley; the Mayor of Ashton-under-Lyne, Mr. J. Hadfield; the Master Cutler, Mr. S. Eric Osborn; and the President of the Sheffield Chamber of Commerce, Mr. C. E. Holmstrom, and a number of officers of the L.N.E.R.

Reference to the centenary was made in an editorial article in our issue of December 21, which also contained a chronological map of the Manchester-Sheffield line.

Sir Ronald Mathews, proposing the toast of the cities of Manchester and Sheffield, said that the Sheffield Ashton-under-Lyne & Manchester Railway had begun to take shape in October, 1838, when the ceremony of breaking the ground took place close to the western entrance of the Woodhead Tunnel. On the next day (December 22) it would be exactly a century since the first train left Sheffield for Manchester with, among its passengers, the Mayor of Sheffield, the Master Cutler, and many other distinguished predecessors of his guests.

The importance of the Manchester-Sheffield line had increased enormously when it had developed into the Manchester, Sheffield & Lincolnshire Railway. After trying, for some time, to bring off a profitable alliance with one of the main-line

trunk railways, it had changed its name to the Great Central and had gone to London, where it had built Marylebone Station. It was over the Sheffield and Manchester section that the principal traffic passed, and it was for this reason that before the war a good deal of work had been done on the electrification scheme. It would be the first important line of railway in this country to be electrified on main-line principles, that was, with electric locomotives hauling both passenger and goods trains. But for the war, electric locomotives, of which the company intended to build seventy, would already have been in use.

Sir Ronald Mathews concluded by paying a tribute to the two cities of Manchester and Sheffield, and said that they were turning as quickly as they were allowed to the manufacture of peaceful products for which they were renowned. He was confident that their industries could reach, not peaks, but level table-lands of prosperity, higher than anything that had been known before. In their efforts they were assured of the full support of the direction and management of the railways in this country.

The Minister of War Transport, proposing the toast of the L.N.E.R., said they had gathered to pay tribute to a group of people who had the initiative, enterprise, and faith to build one of the first railways in this country. He went on to praise the work of the L.N.E.R. during the war, and said that no railway organisation could have reached the dimensions of the third largest corporation in the world—as the L.N.E.R. had—unless it had performed real service to the travelling public, and to trade, commerce, and industry. He could appreciate the managerial skill necessary to bring such a vast corporation to stand the test it had undergone in the war. He referred to the vital part played by the L.N.E.R. in sustaining the

bomber offensive, mentioning that three-quarters of the nation's aerodromes were located on the system and all the building materials to construct the aerodromes, the personnel and stores to service them, and the bombs and petrol needed for the offensive against Germany's vital industrial centres had to be conveyed by L.N.E.R. None of the difficulties of post-war reconstruction was comparable with those overcome in 1940, 1941 and 1942, or with the difficulties their forefathers had faced when they had decided to build the Sheffield-Manchester Railway.

Sir Charles Newton, responding to the toast, said it had been customary at recent functions, when the Minister of War Transport had been present, for transport representatives to quote the words used by Roman gladiators as they entered the arena: "Hail, Caesar, those about to die salute you!" He did not propose to use those words, for he was not convinced that they were about to die. He took comfort in the biblical parable of Jonah and the whale, and he trusted that any Government whale which might be thinking of devouring a transport Jonah would be warned by the fate of the biblical whale. The last war had been, more than any previous war, a transport war. Victory had been due, in no small measure, to the fact that Great Britain had possessed the world's greatest merchant navy, and a railway system second to none. The extent to which, in wartime, capital locked up in railway rolling stock, track and equipment, had been consumed, could not be measured easily, but it was a fact that during the past six years railway physical assets had been used up, and it was not possible to replace them as yet because of the continued shortage of men and materials. At the present time the L.N.E.R. goods traffic was running only 7 per cent. lower than in the corresponding period of 1944. He hoped that the day was not too far distant when railway services would be restored to their pre-war efficiency. Meanwhile the railways could provide only the best service possible in the circumstances, and they asked the travelling public to maintain their wartime patience a little longer.

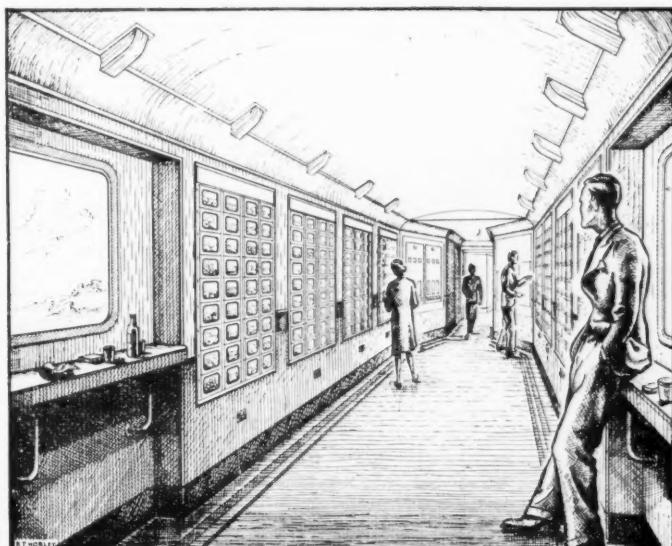
Automat Buffet Cars proposed on G.W.R.

The G.W.R. intends to introduce a new type of train meals service—automat buffet cars—which will enable passengers to purchase snacks, tobacco, and drinks at any time on a journey by putting sixpence or a shilling into the slot of one of the many hundreds of snack compartments. These will contain varieties of sandwiches, salads, savouries, cakes, fruit, chocolate, confectionery, ice cream, cigarettes, matches, stamps, medical requisites, and even drinks, complete with wax cups.

Stand-up counters will be fitted in front of big observation windows on each side of the cars for the convenience of passengers who prefer to take their refreshments there. Entrance to the cars will be by a centre door at each end.

The cars will be decorated in white and brown sycamore, with rubber flooring with colour band margins to match, and lit by fluorescent lighting.

The new cars will be brought into service as soon as food conditions permit and will probably be put into use on short main-line services.



An artist's impression of one of the G.W.R. automat buffet cars

Notes and News

Kitson & Co. Ltd.: Winding-up Order.—Mr. Justice Uthwatt, on December 17, made an order for the compulsory winding-up of Kitson & Co. Ltd.

South African Railway Earnings.—Railway earnings in South Africa for the period November 11 to December 8 amounted to £4,350,148, compared with £4,228,387 in the previous corresponding period.

General Manager Required.—A fully qualified mechanical engineer, under 40 years of age, is required for a senior executive position with a large manufacturing concern. See Official Notices on page 27.

Civil Engineering Assistants Required.—Senior and junior civil engineering assistants are required by the Crown Agents for the Colonies for calculations, designs and specifications of steel structures. See Official Notices on page 27.

Grants for Colonial Development.—Among the latest grants approved under the Colonial Development & Welfare Act, amounting to £1,800,000 for the last three months, is one for £50,000 to Uganda for the development of communications, including aerodromes.

London Midland & Scottish Stock Conversion Trust.—A dividend of 2½ per cent. received on the holding of London Midland & Scottish ordinary stock has permitted the trustees to declare a dividend of £2 5s. per cent. (same) on the 4 per cent. preference stock, leaving £5 to be carried forward. The amount of stock now held in the trust is £894,752.

L.M.S.R. Modern Goods Traffic Invoicing.—The Office Management Association announces that as a result of the interest shown in the address given by Mr. W. H. Vine on L.M.S.R. modern goods traffic invoicing, summarised in our issue of October 5, 1945, it has decided to publish the address in full in pamphlet form. Copies are now available, price 1s., and applications for them should be made to the Secretary, Office Management Association, 2, Caxton Street, Westminster, S.W.1.

Anglo-Belgian Industrial Conversations.—The Federation of British Industries is expecting a visit on January 14 next from a delegation of the Central Industrial Committee of Belgium, under the leadership of its President, M. Van der Rest, who will be accompanied by M. Delbaere, the President of the Flemish Economic Union, and by M. Gérard, Director of the Industrial Committee. The delegation will include also representatives of the textile, iron and steel, coal, chemical and engineering industries. These first discussions between Belgian and British industrialists since the war are expected to range over a number of subjects of general interest.

Carter Paterson & Pickfords Joint Parcels Service.—Hay's Wharf Cartage Co. Ltd. announces that, as from January 1, the parcel collection and delivery services of Carter Paterson & Co. Ltd. and Pickfords Limited have been co-ordinated under centralised management and control. By this amalgamation, the full advantages of the extensive facilities of both companies become available throughout the British Isles. The companies' joint parcels services will operate under the trading title of Carter Paterson & Pickfords Joint Parcels Services. All inquiries should be addressed to the Commercial Department, 238, City Road, London, E.C.1 (telephone number: Clerk-

enwell 7654), or to any of the companies' depots. In consequence of this merger, the following appointments have been made in the joint parcels organisation:

Chief Parcels Manager: Mr. N. D. Fawke; General Assistant: Mr. D. H. Foulds; Co-ordinating Assistant: Mr. A. F. Walton; Claims Manager: Mr. J. B. Green; Commercial Manager: Mr. S. R. Vigor; Staff Manager: Mr. I. Macalaster; Accounts Manager: Mr. W. S. H. Middleton; Traffic Manager, Central London (North): Mr. W. H. Cross; Traffic Manager, Central London (South): Mr. C. Edwards; Midland Area Manager: Mr. E. J. Coxhead; Northern Area Manager: Mr. R. W. Mitchell; Southern Area Manager: Mr. J. V. Hatch; Eastern Area Manager: Mr. H. J. Harrison; South Wales Area Manager: Mr. H. S. Reed.

L.M.S.R. Collision at St. Enoch.—Traffic from St. Enoch L.M.S.R. Station, Glasgow, was interrupted on December 19 after a mishap about a quarter of a mile from the station, caused by the 5.30 p.m. passenger train to Crewe running into the rear of an empty passenger train held up at Gorbals Junction. The third coach of the Crewe express left the rails, and the luggage van attached to it partially telescoped the front of the fourth coach. Two passengers who were seated in the first compartment of the fourth coach were removed to hospital, along with the woman guard of the empty train. Breakdown gangs worked throughout the night to clear the line to ensure that normal traffic would be in operation next morning.

Heenan & Froude Limited.—At the recent annual general meeting of Heenan & Froude Limited, held at Worcester on December 10, the Chairman, after reviewing the wartime activities of the company and its subsidiaries, foreshadowed an expansionist programme, and referred to the fact that the order books of the parent company and its subsidiary, Fielding & Platt, were full. The net orders on hand for the two companies, after making full allowance for cancellations due to cessation of hostilities, total more than £1,250,000, and of this sum a considerable proportion is represented by locomotive test plant. On the outbreak of hostilities in 1939 Heenan & Froude had on order for the L.M.S.R. and L.N.E.R. a large locomotive test plant, production on which had to be suspended but the firm are working on it again, and when erected it will be the most advanced test plant of its kind in the world.

L.M.S.R. Additional Train Services.—As from January 5 new and improved L.M.S.R. services have been introduced between London and Liverpool and Manchester, with accelerations of the boat trains running in connection with the L.M.S.R. Heysham and Belfast, and Holyhead and Kingstown, steamer services. A new train leaves Manchester (London Road) at 4 p.m. arriving at Euston at 8.15 p.m.; a new train leaves Liverpool (Lime St.) at 4.5 p.m. arriving at Euston at 8.35 p.m.; a new train leaves Euston at 1.30 p.m. arriving at Liverpool at 5.35 p.m.; the 12 noon train from Euston to Manchester, which previously ran on Mondays, Fridays, and Saturdays only, runs each weekday. A restaurant car service is provided on all these trains. The 3 p.m. boat train, Euston to Heysham, leaves at 3.35 p.m. without alteration to the arrival time. In the reverse direction the 8.18 a.m. boat train is timed to leave Heysham at 6.25 a.m. (Mondays excepted when there is no steamer service) arriving at Euston at 11.35 a.m. The Holyhead to Kingstown

steamer leaves at 3.30 p.m. instead of 4 p.m. giving a correspondingly earlier arrival at Kingstown, and the steamer formerly leaving Kingstown at 9.20 a.m. (Eire time) leaves at 9.50 a.m. (Eire time) and arrives at Holyhead correspondingly later. The arrival time at Euston is unaltered.

L.M.S.R. Steamer Aground on Way to Stranraer.—When the L.M.S.R. steamer *Duchess of Hamilton* (795 tons) went

British and Irish Railway Stocks and Shares

Stocks	Highest 1945	Lowest 1945	Prices	
			Dec. 31, 1945	Rise/ Fall
G.W.R.				
Cons. Ord. ...	60	47½	56	+ 1
5% Con. Pref. ...	124	104½	110½	+ 3
5½ Red. Pref. (1950) ...	107	101½	103	—
5½ Rt. Charge ...	137	120	122½	—
5½ Cons. Guar. ...	135	117	118½	—
4½ Deb. ...	118	106	105 xd	—
4½ Deb. ...	119	108	107	—
4½ Deb. ...	124	111½	115	—
5½ Deb. ...	138	124	125	—
2½ Deb. ...	83	74½	81½	—
L.M.S.R.				
Ord. ...	33	23½	28	+ 1
4½ Pref. (1923) ...	65	50	56	+ ½
4½ Pref. ...	80	69½	77	—
5½ Red. Pref. (1955) ...	106	99½	101	—
4½ Guar. ...	106	97	100	—
4½ Deb. ...	110	102	103	—
5½ Red. Deb. (1952) ...	110	103	105½	—
L.N.E.R.				
5% Pref. Ord. ...	8½	5½	64	—
Def. Ord. ...	4½	2½	3½	—
4½ First Pref. ...	62	49½	55	—
4½ Second Pref. ...	33	24½	28½	+ 1
5½ Red. Pref. (1955) ...	103	96	97	—
4½ First Guar. ...	104	95	98	—
4½ Second Guar. ...	97	89½	92	—
3½ Deb. ...	91½	82½	87½	- 2½
4½ Deb. ...	109	101	102½	—
5½ Red. Deb. (1947) ...	103	100	101	—
4½ Sinking Fund Red. Deb. ...	106½	103	103½	—
SOUTHERN				
Pref. Ord. ...	79	63	72	—
Def. Ord. ...	27	20½	23	—
5% Pref. ...	124	104	110	+ 2½
5½ Red. Pref. (1964) ...	117	107	106½	+ 1½
5% Guar. Pref. ...	135	117	119	+ 1½
(1957) ...	117	106½	108½	—
4½ Deb. ...	117	104	105½	+ 1½
5½ Deb. ...	137	124	123½ xd	—
4½ Red. Deb. (1962-67) ...	112	104½	105½	—
4½ Red. Deb. (1970-80) ...	113½	104	105½	—
FORTH BRIDGE				
4½ Deb. ...	106	103	104	—
4½ Guar. ...	106	101	103	—
L.P.T.B.				
4½ "A" ...	125	117	120½	—
5½ "A" ...	135	127	130½	—
3½ Guar. (1967-72) ...	100	97½	98½	—
5½ "B" ...	125	115	118	—
"C" ...	70	58	61	+ 1
MERSEY				
Ord. ...	37	31½	32	—
3½ Perp. Pref. ...	72½	68½	69	—
4½ Perp. Deb. ...	104	104	104	—
3½ Perp. Deb. ...	84	78½	81	—
IRELAND*				
BELFAST & C.D.				
Ord. ...	8½	6	7½	—
G. NORTHERN				
Ord. ...	34	24½	31½	- 1½
Pref. ...	52½	42	52	—
Guar. ...	80	68	78½	—
Deb. ...	97½	87½	97½	+ 1
IRISH TRANSPORT				
Common ...	—	—	86½	—
3½ Deb. ...	—	—	102	—

* Latest available quotation

Note of the vacancies on this page relates to a man between the ages of 18 and 50 inclusive unless he is excepted from the provisions of the Control of Engagement Order, 1945, or the vacancy is for employment excepted from the provisions of that Order.

ENGINEERING ASSISTANTS—CIVIL (SENIOR & JUNIOR) required by the Crown Agents for the Colonies for their Engineering Design Department. The appointments carry a scale of salary of £200 x £18 = £400 per annum (Junior), with a higher scale of £400 x £18 = £525 per annum (Senior). Commencing salary fixed according to qualifications, experience and age. Civil Service War Bonus, at present £60 per annum, payable. The posts are not pensionable, but there is an Office Gratuity Scheme.

DUTIES : Calculations, Designs and Specifications of Steel Structures, including Bridges and Buildings, and general engineering design work.

QUALIFICATIONS (SENIOR): Candidates must be first-class draughtsmen and have had considerable experience in a Civil Engineer's or a Structural Steelwork firm's drawing office. They must be capable of preparing detailed designs of bridges and buildings in steel; some reinforced concrete experience would be an advantage. They should have passed the Associate Membership examination of the Institution of Civil

Engineers or hold equivalent exempting degree. (Ref. No. E.2134A.)

QUALIFICATIONS (JUNIOR): Candidates should have spent at least one year in a Civil Engineer's or Structural Steelwork firm's drawing office and have had some experience in steelwork design; some experience in Railway Permanent Way details would be an advantage. They should have passed Parts A and B of the Associate Membership examination of the Institution of Civil Engineers or hold equivalent exempting degree. (Ref. No. E.2135A.)

Write, quoting appropriate reference number, to Ministry of Labour and National Service, Technical and Scientific Register, Room 572, York House, Kingsway, London, W.C.2, for application form, which must be returned completed by 24 January, 1946.

14.12.A.16 (19).

GENERAL MANAGER. Applications are invited from fully qualified mechanical engineers under 40 years of age for a senior executive position with a large manufacturing concern. Preference will be given to those with experience of higher management and with really sound practical knowledge of present-day methods. Starting salary, £1,200 per annum. Full details of education and experience in strict confidence to Box No. 41, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

aground on December 26 a short distance south of Corsewall Point, at the entrance to Loch Ryan, on her way from Larne to Stranraer, 400 service men were thrown about, but none was injured. The vessel got off under her own power after remaining fast for about 15 min. She reached Stranraer more than an hour late.

Wellington Grey & Bruce Railway Company.—The estimated earnings of the Wellington Grey & Bruce Railway Company for the half-year to December 31, will admit of the payment of £6 14s. 9d. per £100 bond. For details of the application of the payment see Official Notices above.

L.N.E.R. Collision at Lofthouse Station.—During the fog which spread to many parts of Great Britain on the night of December 20, the 9.33 p.m. Leeds to London express collided with a goods train outside Lofthouse Station. The passenger train, double headed, was running at reduced speed in the fog. The guard's van and four wagons of the goods train were smashed. Passengers were shaken and the goods guard injured. The passenger train proceeded to London after two hours' delay.

L.N.E.R. Harwich-Zeebrugge Train Ferry.—The L.N.E.R. is taking steps to restore, as soon as circumstances permit, the train ferry service between Harwich and Zeebrugge to provide facilities for the transport of merchandise by through wagons between this country and many parts of the continent of Europe. Of the three ferry boats which were working before the last war, two were sunk by enemy action and the third is still on Government service. The L.N.E.R. has placed a contract with John Brown & Co. Ltd. of Clydebank for the construction of a new train ferry capable of carrying approximately 1,000 tons of freight in rail or road vehicles. The ferry is to be fitted with Sulzer-type diesel engines of 3,200 h.p. driving twin screws at 13 knots.

L.M.S.R. Accident at Lichfield.—On January 1 seventeen persons were killed and a large number injured at Trent Valley Station, Lichfield, when the 2.50 p.m. fish train from Fleetwood to London ran into the rear of the 6.8 p.m. passenger train from Stafford to Nuneaton at 7.10 p.m. The passenger train was standing in the station. Both lines were blocked, and traffic was diverted via Stechford and Bescot. The driver of the fish train suffered shock and bruises, but his fireman

escaped unscathed. The driver and the fireman of the passenger train were uninjured. The L.M.S.R. issued the following official statement: "The L.M.S.R. regret to announce that an accident occurred to-night when a fish train from Fleetwood to London ran into the rear of a local passenger train standing at Lichfield Station. Unfortunately the collision occurred just as passengers were getting into and out of the local train, and several were killed and a number injured. The cause of the accident is under inquiry."

E.C.I.T.O. Headquarters.—From Monday last, December 31, the address of the headquarters of the European Central Inland Transport Organisation is 40, Grosvenor Square, London, W.1. The telephone number is Mayfair 9070.

Institute of Traffic Administration.—A meeting of the Edinburgh & East of Scotland Centre of the Institute of Traffic Administration was held in Edinburgh on December 13, when an address on "Lubricating Oils" was delivered by Mr. Leslie Robertson, of the Petroleum Board. The next meeting will be held on January 10, when an address on "Tyres" will be given by Mr. R. Thomson, of the Dunlop Rubber Co. Ltd.

Record Crowds at Paddington.—On Thursday, December 27 record crowds thronged Paddington Station and over 61,000 passengers were despatched in 69 main-line trains. These figures compare with the previous highest totals of 49,700 passengers who left in 57 trains on the Saturday preceding August Bank Holiday, and 53,000 passengers in 55 trains on Friday, December 22, 1944. To accommodate this record number, a number of additional trains had to be run, many of which left with passengers standing in the compartments as well as corridors.

S.R. Jersey-Granville Sailings.—Commencing January 15, the Southern Railway announces the restoration of the Jersey-Granville service by s.s. *Autocarrier*. The service will be fortnightly, leaving Jersey on Tuesdays, and provides a convenient connection in Jersey with the Monday night mail service from Southampton (Guernsey depart Tuesday mornings). From Granville the service will run on alternate Wednesdays, commencing on January 16. In this direction the *Autocarrier* will continue to Southampton direct after calling at Jersey. Sailing times will be announced locally as variation is necessitated by tidal conditions.

OFFICIAL NOTICES

Canadian National Railway Company

WELLINGTON GREY & BRUCE RAILWAY COMPANY 7 PER CENT. BONDS.

NOTICE IS HEREBY GIVEN that the estimated earnings of the Wellington Grey & Bruce Railway Company for the half-year ending 31st December, 1945, applicable to meet outstanding interest on the above Bonds redeemed up to and including 1st January 1942, will admit of the payment of £6 14s. 9d. per £100 Bond, and that this payment will be applied, as follows, viz.: £1 7s. 3d. balance due for Coupon No. 135 due 1st January, 1938; £3 10s. 9d. full payment of Coupon No. 136 due 1st July, 1938; £1 17s. 6d. on account of Coupon No. 137 due 1st January, 1939, and will be made on and after 1st January, 1946, at the offices of the Canadian National Railway Company, Orient House, 42-45, New Broad Street, London, E.C.2, England.

The Coupons must be left three clear days for examination.

A. H. CONEYBEARE,
European Secretary and Treasurer.
London, 20th December, 1945.

Landslide between Witney and Haslemere, S.R.—During the recent wet weather a landslide occurred between Witney and Haslemere, near Birtley Bridge. The up line was closed for nearly three days, and all non-stop trains between Waterloo and Portsmouth were diverted to the Central section route via Epsom. Local stations on the direct Portsmouth route were served by a two-way shuttle service working over the down line.

S.R. Leave Boat Collides at Dover Pier.—The Southern Railway steamer *Invicta* from Calais with 1,500 B.A.O.R. troops, when going astern and making berth at Admiralty Pier, Dover, was in collision on December 27 with the stern of the British steamer *Ben-My-Chree* moored at the pier. Lloyd's report that the *Invicta* suffered considerable damage to the upper part of the stern and damage to the boat-deck, but is understood to be maintaining service. *Ben-My-Chree* broke all mooring ropes and damaged her stern.

Contracts and Tenders

An order for 250 overhead-ice refrigerator vans, for delivery in 1946, has been announced by Mr. W. M. Neal, Vice-President of the Canadian Pacific Railway. When this stock is in service the C.P.R. will have a total of 4,285 refrigerator vans, passenger, express and freight, of which 948 will be of the overhead-ice type.

Forthcoming Meetings

January 10 (Thu.).—The Southern Railway Lecture & Debating Society, Chapter House, St. Thomas' Street, London Bridge, S.E.1. 5.45 p.m. "The Work of the Civil Engineering Department of the Southern Railway," by Mr. V. A. M. Robertson, C.B.E., M.C., M.Inst.C.E., etc.

January 12 (Sat.).—The Institution of Mechanical Engineers, Storey's Gate, St. James's Park, London, S.W.1. 3.30 p.m. "Fuel Injection System on Diesel Engines," by Mr. S. Sarwal, B.Sc.(Eng.), G.I.Mech.E.

January 14 (Mon.).—The Junior Institution of Engineers, 39, Victoria Street, London, S.W.1. 6.45 p.m. "The Railway and Mining Subsidence," by Mr. M. G. R. Smith, B.Sc., A.M.Inst.C.E. (G.W.R.).

Railway Stock Market

Hopeful views as to international affairs maintained more cheerful conditions in stock markets, although apart from South African gold mining shares which reflected boom conditions at the Cape, business generally showed little expansion. British Funds held recent gains and were firm, and leading industries, including Imperial Chemical, Dunlop Rubber and Turner & Newall, moved moderately higher. A dull exception was provided by colliery shares, which reacted on further consideration of the Coal Bill, largely because of the complexities of the latter; but the view prevails that it appears to provide a fair compensation basis for shareholders. In fact other nationalisation groups rallied, particularly home rails, although the approaching dividends were an important factor in this case. It is expected that dividends will be maintained; but there are apparently still hopes in some quarters of possible small increases on L.M.S.R. ordinary and L.N.E.R. second preference if allocations to contingencies reserves can be reduced now the war is over.

An important factor arising from the Coal Bill is that it seems to make provision for a square deal for preference shareholders. Not only have colliery preference shares improved, but also those of electric supply companies. Among home rails a feature has been a good rally in those preference stocks which were quoted substantially over par but which in recent months declined steadily on the fear that nationalisation might mean repayment at par. Attention has been drawn on various occasions in these notes to the

downward trend in these stocks. Towards the middle of last month they had been reduced to levels that attracted buyers, and the rally which recently commenced has received an impetus from hopeful deductions from the Coal Bill in respect of compensation for preference shareholders. Nevertheless, the whole question is still surrounded by so many uncertainties that it is very difficult to take a definite view. Nevertheless, it would seem that fair compensation would imply that preference stocks of the Great Western and Southern are still undervalued and that a further part of the heavy fall shown in recent months is likely to be regained. There appears to be growing feeling as to L.M.S.R. and L.N.E.R. that preference stocks may have better scope for appreciation than the ordinary or equity stocks; but this turns on views as to the nationalisation terms; and as the latter are entirely an unknown factor, estimates are purely guesswork. The statement of the president of the National Union of Railwaymen that a Bill to bring the railways under public ownership is expected during 1946 and that "public ownership of the railways is only part of the scheme which we advocate" has led to suggestions that nationalisation of the railways may be proposed first, leaving schemes for other forms of transport to be dealt with at later dates.

In any case the prevailing view in the City is that at current levels home railway stocks are undervalued assuming fair compensation; and that there is a strong case for nationalisation terms being based not on the existing

fixed rental, but on the standard revenue of the 1921 Act.

The upward trend in home rails has raised Great Western to 56, compared with 54½ a week ago; the 5 per cent. preference rallied further from 107½ to 110½, and the 4 per cent. debentures strengthened from 105½ to 106. Southern deferred firmed up from 23 to 23½, the preferred from 72 to 72½, the 5 per cent. preference rallied from 108 to 110, and the 4 per cent. debentures were fractionally better at 105½, and the 5 per cent. guaranteed stock improved to 118½.

L.M.S.R. ordinary was 28½, comparing with 27½ a week ago; but the 1923 preference eased to 56, and the senior preference was unchanged at 77, although the 4 per cent. debentures at 103½ were fractionally better. L.N.E.R. second preference at 28½ gained a point, and the 4 per cent. debentures strengthened to 103. London Transport "C" after declining a point, rallied to 60 and was unchanged on balance.

Argentine rails moved uncertainly, reflecting revived rumours of purchase of the railways by the Argentine Government and divergent reports as to the crop position. Nevertheless, selling was very light. Buenos Ayres Great Southern ordinary was 10½, compared with 10½ a week ago. In some other instances earlier gains were not entirely lost. Buenos Ayres & Pacific consolidated debentures at 56 were 1½ better. Elsewhere, Canadian Pacifics rose further to 24½, reflecting strength of dollar stocks. French railway sterling bonds have improved since news of the franc devaluation.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffic for week		No. of Week	Aggregate traffics to date			Shares or Stock	Prices			
			Total this year	Inc. or dec. compared with 1943/4		Totals		Increase or decrease		Highest 1945	Lowest 1945	Dec. 31 1945	
						1944/5	1943/4						
South & Central America													
Antofagasta	834	23.12.45	£ 41,680	+ 11,290	51	£ 1,530,720	£ 1,468,030	+ 62,690	Ord. Stk.	12	8½	10	
Arg. N.E.	753	22.12.45	ps. 284,000	+ ps. 17,200	25	ps. 7,549,500	ps. 7,116,400	+ ps. 433,100	6 p.c. Deb.	10	5½	6½	
Bolivar	174	Nov., 1945	4,706	- 91	47	53,283	58,052	+ 4,769	Bonds	25	17	22½	
Brazil	...	...	...	...	...	...	...	...	Ord. Stk.	7	5	5½
B.A. Pacific	2,771	8.12.45	ps. 155,125	+ ps. 15,500	23	ps. 2,972,000	ps. 2,861,625	+ ps. 110,375	Ord. Stk.	13½	10½	11½	
B.A.G.S.	5,080	22.12.45	ps. 4,122,000	+ ps. 472,000	25	ps. 79,492,000	ps. 73,356,000	+ ps. 6,136,000	Ord. Stk.	12½	9½	10½	
B.A. Western	1,924	22.12.45	ps. 1,280,000	+ ps. 70,000	25	ps. 29,329,000	ps. 27,848,000	+ ps. 1,481,000	"	9½	7½	7½	
Cent. Argentine Do.	3,700	22.12.45	ps. 3,173,300	+ ps. 183,200	25	ps. 75,936,400	ps. 70,589,250	+ ps. 5,347,150	Dfd.	5	2½	4	
Cent. Uruguay	972	15.12.45	46,426	+ 9,546	23	879,312	766,094	+ 113,218	Ord. Stk.	7½	4	6½	
Costa Rica	262	Oct., 1945	31,759	+ 8,147	18	128,126	97,913	+ 25,313	Stk.	16½	13	13	
Dorada	70	Nov., 1945	28,954	- 546	47	330,489	294,943	+ 35,546	I Mt. Deb.	103	102	10½	
Entre Rios	808	22.12.45	ps. 420,300	+ ps. 59,500	25	ps. 10,516,300	ps. 9,386,700	+ ps. 1,129,600	Ord. Stk.	7½	4½	6½	
G.W. of Brazil	1,030	22.12.45	34,200	+ 5,700	51	1,328,800	1,154,300	+ 174,500	Ord. Stk.	30/-	23/6	25/7	
Inter. Ctl. Amer.	794	Nov., 1945	8636,212	+ \$89,678	47	\$8,130,214	\$6,827,493	+ \$1,302,721	-	-	-	-	
La Guaira	22	Nov., 1945	6,417	+ 1,040	47	68,797	83,595	- 14,798	5 p.c. Deb.	78	70	70	
Leopoldina	1,918	15.12.45	53,960	+ 7,309	50	2,696,035	2,324,185	+ 371,850	Ord. Stk.	4½	3½	4	
Mexican	483	14.12.45	19,085	+ 2,235	23	ps. 1,491,500	ps. 11,465,200	+ ps. 3,450,200	Ord. Stk.	4½	4	14	
Midland Uruguay	319	Nov., 1945	19,085	+ 2,235	21	94,099	83,871	+ 10,227	-	-	-	-	
Nitrate	382	15.12.45	8,047	- 17	50	181,726	176,948	+ 4,778	Ord. Sh.	75 6	67 6	74½	
N.W. of Uruguay	113	O.Ct., 1945	7,124	+ 1,083	19	175,029	187,587	- 1,642	Pr. Li. Stk.	79 6	77	78½	
Paraguay	274	21.12.45	ps. 89,376	+ ps. 25,540	25	ps. 1,536,211	ps. 1,518,079	+ ps. 18,132	Pref.	108	7½	8½	
Peru Corp.	1,059	Nov., 1945	139,346	+ 11,373	21	704,271	636,125	+ 68,146	-	-	-	-	
Salvador	100	O.Ct., 1945	c 105,000	+ c 29,000	16	c 376,000	c 323,000	+ c 53,000	Ord. Stk.	60 4	50 4	52½	
San Paulo	156	Nov., 1945	2,630	+ 590	21	12,320	12,775	- 455	Ord. Stk.	17/	10 6	15/3	
Talat	...	...	52,156	- 5,288	25	1,112,302	1,180,896	+ 68,594	Ord. Sh.	3	1	1
United of Havana	1,301	22.12.45	1,660	+ 20	21	68,909	56,029	+ 12,880	Ord. Stk.	-	-	-	
Uruguay Northern	73	Nov., 1945	-	-	-	-	-	-	Ord. Stk.	-	-	-	
Canada	Canadian National	23,569	Nov., 1945	6,861,200	- 534,600	49	79,651,400	80,524,600	- 873,200	Ord. Stk.	24	14½	22
Canadian Pacific	17,030	21.12.45	1,148,000	- 98,200	50	61,694,200	62,226,000	- 531,800	Ord. Stk.	-	-	-	
Various	Barsi Light†	202	Oct., 1945	21,412	- 3,457	29	166,642	165,000	+ 1,642	Ord. Stk.	131	123	123½
	Beira	204	Oct., 1945	70,588	- 7,961	4	70,588	78,549	- 7,961	Prf. Sh.	-	-	-
	Egyptian Delta	607	10.11.45	24,680	+ 3,618	33	374,935	416,539	- 41,604	B. Deb.	71	55½	66½
	Manila	-	-	-	-	-	-	-	Inc. Deb.	97½	85	95½	
	Mid. of W. Australia	277	Oct., 1945	19,549	- 2,494	16	64,836	82,970	- 18,134	-	-	-	
	Nigeria	1,900	29.9.45	81,372	+ 12,896	26	1,316,308	1,591,450	- 275,142	-	-	-	
	Rhodesia	2,442	Oct., 1945	516,412	- 1,087	4	516,412	517,499	- 1,087	-	-	-	
	South African	13,301	24.11.45	1,062,523	+ 14,695	34	34,134,559	30,643,307	+ 3,492,252	-	-	-	
	Victoria	4,774	Aug., 1945	1,250,584	- 42,708	-	-	-	-	-	-	-	

Note. Yields are based on the approximate current price and are within a fraction of ½. Argentine traffics are given in sterling calculated @ 16 pesos to the £. Receipts are calculated @ 1s. 6d. to the rupee.